

California Cancer Facts & Figures 2015



A sourcebook of cancer data for cancer prevention and control activities in California

We are very pleased to present *California Cancer Facts & Figures 2015*, published by the American Cancer Society and the California Cancer Registry of the California Department of Public Health. Each year, we strive to provide the latest data on cancer incidence and mortality in the state, as well as the strategies that will save more lives from the disease. This publication is designed to complement the American Cancer Society *Cancer Facts & Figures 2015* publication. (Visit cancer.org/statistics for a copy.)

Two of the most promising trends we've seen over the past two decades are steady declines in both cancer incidence and mortality rates. Recent figures show cancer incidence rates have dropped 13% and death rates have declined 26% percent in California since 1988. And the overall cancer incidence rate in the state remains lower than the rest of the nation.

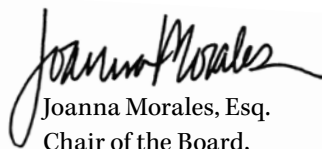
Even with these declines, an estimated 172,090 Californians will be diagnosed with cancer and 58,180 will die of the disease in 2015. The most commonly diagnosed cancers in men will be prostate, lung, and colorectal cancers. Among women, breast, lung, and colorectal cancers will be the most frequently diagnosed. Lung, colorectal, prostate, and breast cancers will also be the most common causes of cancer-related death.

We could save more lives from cancer simply by applying what we already know about detecting, diagnosing, and treating the disease. In the US, about one-third of cancer deaths are caused by tobacco smoking. In addition, up to one in three cancer cases is related to overweight or obesity, physical inactivity, and/or poor nutrition. Screening can often detect cancers early, which usually means less extensive treatment and better outcomes.

We have a unique opportunity in the US and California to accelerate rising colorectal cancer screening rates and save more lives from this disease by joining forces with health care systems, corporations, other nonprofits, and government agencies. As you'll see in this report, the American Cancer Society is a leader in a nationwide effort to increase colorectal cancer screening rates to 80% by 2018 among adults ages 50 and older.

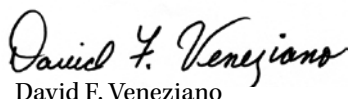
While we've made tremendous progress, there is much work ahead of us. We hope you will find *California Cancer Facts & Figures 2015* informative, and we urge you to join us to help finish the fight against cancer, once and for all.

Sincerely,



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Chair of the Board,

American Cancer Society, Inc., California Division



David F. Veneziano

Executive Vice President,

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Contents

Basic Cancer Data for California.....	1
Cancer Risk.....	6
Lifestyle Factors and Cancer Prevention.....	7
Cancer Stages at Diagnosis.....	11
Cancer Disparities.....	14
Selected Cancers.....	18
American Cancer Society California Division.....	26
American Cancer Society Research Program.....	27
American Cancer Society Cancer Action Network.....	28
California Cancer Control Activities.....	30
California Cancer Registry.....	32

Tables

Table 1. Leading Causes of Death in California, 2013.....	2
Table 2. Observed Number of New Cases, Deaths, and Existing Cases of Common Cancers in California, 2012.....	2
Table 3. Observed New Cancer Cases and Deaths, 2012.....	3
Table 4. Observed New Cancer Cases by County, 2012.....	4
Table 5. Observed Cancer Deaths by County, 2012.....	5
Table 6. Five-year Relative Survival by Stage at Diagnosis in California, 2003-2012.....	12
Table 7. Three Common Cancers: New Cases and Percent of Early Stage Cases at Diagnosis, California, 2012.....	12
Table 8. Percent of Cancer Cases Diagnosed at Early Stage, California and Selected Counties, 2012.....	13
Table 9. Five Most Common Cancers and Number of New Cases by Sex and Detailed Race/Ethnicity, California, 2008-2012.....	15
Table 10. American Cancer Society Recommendations for the Early Detection of Cancer in Average-risk Asymptomatic People.....	17
Table 11. Number of Children Diagnosed with Cancer by Age at Diagnosis and Race/Ethnicity in California, 2012.....	21
Table 12. Cancer Incidence among Children Ages 0-14 by Race/Ethnicity in California, 2012.....	21
Table 13. Summary of Research Grants and Fellowships: In Effect during Fiscal Year Ending December 31, 2014.....	28
Table 14. Cancer Reporting in California.....	31

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Basic Cancer Data for California

What is cancer?

Cancer is a large group of diseases characterized by uncontrolled growth and spread of abnormal cells. If the spread is not controlled, it can result in death. Cancer is caused by both external factors (tobacco, infectious organisms, chemicals, and radiation) and internal factors (inherited mutations, hormones, immune conditions, and mutations that occur from metabolism).

How many Californians alive today have ever had cancer?

More than 1,417,700 Californians who are alive today have a history of cancer. Some of these individuals are cancer free, while others still have evidence of cancer and may be undergoing treatment. “Cancer free” usually means that a patient has no evidence of disease and has the same life expectancy as a person who has never had cancer.

How many new cases are expected to occur in California in 2015?

In 2015, it is estimated that 172,090 Californians will be diagnosed with cancer. This estimate does not include carcinoma *in situ* (noninvasive cancer) of any site except urinary bladder, and does not include basal cell and squamous cell skin cancers, which are not required to be reported to cancer registries. This is equivalent to nearly 18 new cases every hour of every day.

How many Californians are expected to die of cancer in 2015?

More than 58,000 Californians die of cancer each year – about 158 people each day. Cancer is the second most common cause of death in the state, exceeded only by heart disease, accounting for nearly 1 of every 4 deaths. Following American Cancer Society guidelines for cancer prevention will also lower the risk for other diseases such as heart disease, cerebrovascular disease, chronic lung disease, and diabetes.

How many people survive cancer?

In the early 1900s, few cancer patients had any hope of long-term survival. In the 1930s, less than 1 in 5 was alive five years after treatment, in the 1940s it was 1 in 4, and in the 1960s it was 1 in 3. Today, it is estimated that 2 out of 3 cancer patients will be alive five years after diagnosis and treatment. The improvement in survival reflects both progress in diagnosing certain cancers at an earlier stage and improvements in treatment. It is estimated that nearly 105,000 Californians who are diagnosed with cancer this year will be alive in five years.

Data Sources: California Cancer Registry

Cancer Cases and Deaths

Observed California cases and deaths were calculated by the California Cancer Registry (CCR) of the California Department of Public Health (CDPH).

Cancer Incidence and Mortality

Where not otherwise specified, cancer incidence data are from the most current data in the CCR. The CCR is a legally mandated, statewide, population-based cancer registry, implemented in 1988. Cancer mortality data are from the CDPH Center for Health Statistics and are based on the underlying cause of death.

California Behavioral Risk Factor Survey, California Adult Tobacco Survey

These surveys are conducted by the Public Health Survey Research Program, which is part of the California Department of Public Health’s Chronic Disease Surveillance and Research Branch (CDSRB). They are a collaboration between the Centers for Disease Control and Prevention (CDC), California State University, Sacramento, and the CDPH. To monitor key health behaviors, approximately 8,500 randomly selected adults are interviewed by telephone annually. Not all questions are asked each year; the most recent data available are presented.

CCR Acknowledgment and Disclaimer

The collection of cancer incidence data used in this study was supported by the California Department of Public Health as part of the statewide cancer reporting program mandated by California Health and Safety Code Section 103885; the National Cancer Institute’s Surveillance, Epidemiology, and End Results Program under contract HHSN261201000140C awarded to the Cancer Prevention Institute of California, contract HHSN261201000035C awarded to the University of Southern California, contract HSN261201000034C awarded to the Public Health Institute; and the CDC’s National Program of Cancer Registries, under agreement U58DP003862-03 awarded to the California Department of Public Health. The ideas and opinions expressed herein are those of the author(s) and endorsement by the State of California, Department of Public Health, the National Cancer Institute, and the CDC or their Contractors and Subcontractors is not intended nor should it be inferred.

Table 1. Leading Causes of Death in California, 2013

Cause	Deaths	Percent
Heart Disease	59,832	24%
Cancer	57,504	23%
Cerebrovascular Disease	13,603	5%
Chronic Lower Respiratory Disease	13,550	5%
Alzheimer's Disease	11,868	5%
Accidents	11,189	5%
Diabetes	7,998	3%
Influenza and Pneumonia	6,523	3%
Chronic Liver Disease	4,777	2%
Intentional Self-harm	4,006	2%
All Deaths	248,118	100%

Source: California Department of Public Health, Death Records.
Prepared by the California Department of Public Health, California Cancer Registry.

California Statistics

- Cancer incidence rates in California declined by 13% from 1988 to 2012.
- Cancer mortality rates declined by 26% between 1988 and 2012. Mortality rates declined for all four major racial/ethnic groups in the state.
- Tobacco-related cancers continue to decline, including cancers of the lung and bronchus, larynx, oral cavity, stomach, and bladder. California has experienced a much larger decrease in lung cancer incidence rates than the rest of the US, in large part due to the success of the state's tobacco control initiative.
- The female breast cancer incidence rate in California has decreased by 8%, but the mortality rate has decreased by 35%.
- Colon and rectum cancer incidence and mortality rates are declining sharply in most racial/ethnic groups.
- Cancer incidence in California is about the same or somewhat lower than elsewhere in the US for most types of cancer.
- Despite these improvements, nearly 1 out of every 2 Californians born today will develop cancer at some point in their lives, and it is likely that 1 in 5 will die of the disease.

How do cancer incidence rates in California compare to the rest of the United States?

Cancer rates for the US are estimated by the Surveillance, Epidemiology, and End Results (SEER) Program. The SEER Program registers cancer patients in geographic areas covering about 26% of the US population, including all of California. In 2007-2011, the overall cancer incidence rate in the state was lower compared to the rest of the nation. California cancer incidence rates for Asian/Pacific Islanders, African Americans, and non-Hispanic whites were between 2% and 4% lower than the rest of

the country. Hispanics in California had a nearly 9% lower incidence rate than other Hispanics in the nation. Some of the differences in rates may reflect difference in classifying the race/ethnicity of cancer cases between California and SEER.

Table 2. Observed* Number of New Cases, Deaths, and Existing Cases of Common Cancers in California, 2012

Male	New Cases		Deaths		Existing Cases	
Prostate	19,164	25%	2,972	10%	267,500	41%
Lung	8,462	11%	6,496	22%	17,900	3%
Colon and Rectum	7,332	9%	2,685	9%	61,300	9%
Leukemia & Lymphoma	8,389	11%	2,580	9%	57,400	9%
Urinary Bladder	5,173	7%	1,096	4%	41,500	6%
All Sites Combined	77,687	100%	29,553	100%	645,300	100%
Female	New Cases		Deaths		Existing Cases	
Breast	25,037	32%	4,464	16%	321,700	42%
Lung	8,134	10%	5,967	21%	22,000	3%
Colon and Rectum	6,782	9%	2,504	9%	61,600	8%
Uterus & Cervix	6,818	9%	1,390	5%	97,700	13%
Leukemia & Lymphoma	6,255	8%	2,054	7%	49,700	6%
All Sites Combined	78,810	100%	27,961	100%	772,400	100%

*Note that these numbers are listed differently than in previous *California Cancer Facts & Figures* publications. These numbers represent actual cancer cases and deaths from 2012, the year for which most recent data are available. Excludes non-melanoma skin cancers and in situ cancers, except bladder. Deaths include persons who may have been diagnosed in previous years.

Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Table 3. Observed* New Cancer Cases and Deaths, 2012

	Observed New Cases			Observed Deaths		
	Both Sexes	Male	Female	Both sexes	Male	Female
All Sites	156,497	77,687	78,810	57,514	29,553	27,961
Oral Cavity and Pharynx	4,060	2,869	1,191	973	687	286
Digestive System	29,849	16,507	13,342	16,097	9,125	6,972
Esophagus	1,442	1,138	304	1,358	1,058	300
Stomach	3,006	1,780	1,226	1,568	913	655
Small Intestine	751	406	345	155	83	72
Colon Excluding Rectum	9,788	4,876	4,912	4,122	2,077	2,045
Rectum and Rectosigmoid Junction	4,326	2,456	1,870	1,067	608	459
Anus, Anal Canal and Anorectum	718	269	449	102	53	49
Liver and Intrahepatic Bile Duct	3,689	2,632	1,057	3,068	2,057	1,011
Gallbladder	433	118	315	247	88	159
Other Biliary	724	412	312	158	69	89
Pancreas	4,360	2,214	2,146	4,029	2,035	1,994
Retroperitoneum	127	66	61	30	16	14
Respiratory System	17,800	9,396	8,404	12,848	6,808	6,040
Nose, Nasal Cavity and Middle Ear	255	152	103	53	33	20
Larynx	860	721	139	295	256	39
Lung and Bronchus	16,596	8,462	8,134	12,463	6,496	5,967
Pleura	18	10	8	13	8	5
Bones and Joints	311	184	127	171	100	71
Soft Tissue Including Heart	1,339	735	604	518	273	245
Melanoma of the Skin	8,134	4,919	3,215	959	625	334
Other Non-Epithelial Skin	770	478	292	363	256	107
Breast	25,239	202	25,037	4,493	29	4,464
Female Genital System	10,051	0	10,051	3,111	0	3,109
Cervix Uteri	1,461	0	1,461	422	0	422
Corpus Uteri and Uterus, NOS**	5,357	0	5,357	968	0	968
Ovary	2,479	0	2,479	1,515	0	1,515
Vagina	149	0	149	54	0	54
Vulva	371	0	371	95	0	95
Male Genital System	20,441	20,441	0	3,078	3,078	0
Prostate	19,164	19,164	0	2,972	2,972	0
Testis	1,092	1,092	0	69	69	0
Penis	145	145	0	31	31	0
Urinary System	12,390	8,783	3,607	2,978	2,022	956
Urinary Bladder	6,721	5,173	1,548	1,517	1,096	421
Kidney and Renal Pelvis	5,436	3,453	1,983	1,394	888	506
Ureter	145	97	48	33	16	17
Eye and Orbit	340	189	151	34	23	11
Brain and Other Nervous System	2,262	1,307	955	1,709	977	732
Thyroid Gland	4,934	1,134	3,800	223	90	133
Other Endocrine, Thymus	228	105	123	119	56	63
Hodgkin Disease	845	467	378	138	84	54
Non-Hodgkin Lymphomas	6,979	3,855	3,124	2,097	1,129	968
Multiple Myeloma	2,230	1,318	912	1,215	653	562
Leukemias	4,590	2,749	1,841	2,399	1,367	1,032
Lymphocytic Leukemia	2,238	1,409	829	751	438	313
Acute Lymphocytic Leukemia	737	428	309	244	140	104
Chronic Lymphocytic Leukemia	1,363	869	494	457	268	189
Myeloid and Monocytic Leukemia	2,193	1,243	950	1,167	660	507
Acute Myeloid Leukemia	1,515	838	677	972	548	424
Acute Monocytic Leukemia	68	44	24	9	–	–
Chronic Myeloid Leukemia	555	330	225	103	57	46
Ill Defined/Unknown	3,159	1,616	1,543	3,724	1,963	1,761

*Note that these numbers are listed differently than in previous *California Cancer Facts & Figures* publications. These numbers represent actual cancer cases and deaths from 2012, the year for which most recent data are available. **NOS: Not otherwise specified.

Excludes non-melanoma skin cancers and carcinoma *in situ*, except bladder. Deaths include persons who may have been diagnosed in previous years. Counts of less than 5 are suppressed.

Source: California Cancer Registry, California Department of Public Health.

Prepared by the California Department of Public Health, California Cancer Registry.

Table 4. Observed* New Cancer Cases by County, 2012

	All Sites	Bladder	Breast	Colon & Rectum	Leukemia	Lung	Melanoma	Myeloma	NHL**	Oral	Pancreas	Prostate	Uterus & Cervix
Alameda	6,285	220	1,069	564	173	656	252	95	272	161	176	862	307
Alpine	—	—	—	—	—	—	—	—	—	—	—	—	—
Amador	266	11	46	18	—	39	21	—	11	—	—	28	—
Butte	1,300	78	177	124	45	183	81	20	54	39	38	140	50
Calaveras	311	16	36	26	—	48	15	—	15	—	17	47	—
Colusa	94	—	14	—	—	13	—	—	—	—	—	12	—
Contra Costa	5,345	248	840	483	148	557	381	68	236	138	154	745	204
Del Norte	97	—	15	—	—	17	—	—	—	—	—	11	—
El Dorado	1,056	46	159	81	39	109	91	18	44	37	38	142	37
Fresno	3,370	130	544	299	95	426	136	47	134	73	94	357	135
Glenn	126	—	21	22	—	18	—	—	—	—	—	—	—
Humboldt	722	55	101	64	16	79	40	—	30	29	23	91	31
Imperial	606	12	90	60	17	74	12	12	40	13	—	79	21
Inyo	106	—	21	15	—	—	—	—	—	—	—	21	—
Kern	2,869	119	427	231	89	357	124	40	121	93	53	343	119
Kings	522	26	64	46	25	54	21	—	30	21	18	62	22
Lake	396	20	53	36	11	62	21	—	15	—	11	51	15
Lassen	113	—	15	18	—	18	—	—	—	—	—	—	—
Los Angeles	37,036	1,495	6,188	3,635	1,082	3,488	1,249	562	1,647	900	1,058	4,425	1,823
Madera	578	32	79	41	23	70	26	—	28	14	21	79	22
Marin	1,534	69	239	118	50	148	156	18	82	38	46	221	61
Mariposa	124	—	15	—	—	21	—	—	—	—	—	16	—
Mendocino	468	27	62	40	18	54	29	—	20	17	17	51	19
Merced	908	33	122	95	30	119	35	12	50	26	28	97	31
Modoc	64	11	—	—	—	—	—	—	—	—	—	—	—
Mono	58	—	11	—	—	—	—	—	—	—	—	11	—
Monterey	1,602	70	222	122	59	148	94	23	72	35	48	236	63
Napa	787	54	124	60	31	81	41	15	40	24	24	94	29
Nevada	602	37	87	51	18	72	40	15	33	13	23	95	15
Orange	12,741	489	2,119	1,156	362	1,289	832	187	562	334	353	1,513	533
Placer	2,059	131	349	139	53	217	185	23	105	56	50	259	71
Plumas	127	—	12	11	—	11	12	—	—	—	—	17	—
Riverside	9,172	436	1,399	874	264	1,029	516	135	370	243	244	1,237	385
Sacramento	6,473	255	1,102	576	154	811	283	92	245	170	200	767	309
San Benito	215	11	31	18	16	19	—	—	13	—	—	24	—
San Bernardino	7,491	294	1,149	744	206	770	312	103	290	194	184	972	392
San Diego	13,162	581	2,121	1,141	396	1,427	793	181	643	347	361	1,501	540
San Francisco	3,939	157	566	360	105	477	171	54	187	109	116	423	174
San Joaquin	2,756	127	454	216	88	342	103	33	104	55	76	380	114
San Luis Obispo	1,486	78	229	131	42	153	173	21	70	31	30	166	32
San Mateo	3,627	165	632	274	112	370	198	46	185	106	99	458	147
Santa Barbara	1,806	96	291	156	67	180	151	31	79	65	43	182	70
Santa Clara	7,438	301	1,206	633	215	742	397	99	359	178	203	980	312
Santa Cruz	1,265	48	224	87	34	127	105	14	56	36	31	180	39
Shasta	1,111	51	161	111	27	155	94	15	40	36	25	118	40
Sierra	19	—	—	—	—	—	—	—	—	—	—	—	—
Siskiyou	268	14	47	23	—	41	15	—	—	—	—	28	—
Solano	2,037	82	316	145	48	258	96	31	81	37	65	293	96
Sonoma	2,637	125	432	242	85	270	232	31	124	81	77	268	120
Stanislaus	2,055	102	325	193	53	240	114	22	90	49	59	224	75
Sutter	381	12	58	33	16	58	23	—	23	—	12	36	13
Tehama	355	22	48	37	11	51	23	—	15	15	—	39	11
Trinity	101	—	—	—	—	15	—	—	—	—	—	—	—
Tulare	1,394	54	211	117	43	149	67	20	64	31	42	166	69
Tuolumne	387	17	68	29	17	45	32	—	19	12	11	40	14
Ventura	3,616	168	661	291	122	323	229	50	173	99	102	424	155
Yolo	754	42	135	60	20	61	41	11	34	18	22	84	26
Yuba	277	—	36	27	11	35	12	—	15	—	—	35	—

*Note that these numbers are listed differently than in previous *California Cancer Facts & Figures* publications. These numbers represent actual cancer cases diagnosed in 2012, the year for which most recent data is available. **NHL: Non-Hodgkin Lymphoma.

Excludes non-melanoma skin cancers and carcinoma *in situ*, except bladder. Counts of 10 or less are suppressed.

Source: California Cancer Registry, California Department of Public Health.

Prepared by the California Department of Public Health, California Cancer Registry. Please visit the California Cancer Registry website at ccrca.org for more information.

Table 5. Observed* Cancer Deaths by County, 2012

	All	Breast	Bladder	Colon & Rectum	Leukemia	Lung	Myeloma	NHL**	Ovary	Pancreas	Prostate	Stomach	Uterus & Cervix
Alameda	2,312	180	61	214	81	468	48	104	67	167	107	75	50
Alpine	—	—	—	—	—	—	—	—	—	—	—	—	—
Amador	119	—	—	10	—	35	—	—	—	—	—	—	—
Butte	505	31	17	41	20	132	10	18	16	37	32	—	12
Calaveras	117	—	—	10	—	29	—	—	—	12	—	—	—
Colusa	26	—	—	—	—	—	—	—	—	—	—	—	—
Contra Costa	1,794	145	50	158	64	433	37	64	42	104	100	29	37
Del Norte	56	—	—	—	—	20	—	—	—	—	—	—	—
El Dorado	325	25	—	30	10	70	—	15	10	28	18	—	—
Fresno	1,215	98	30	109	51	283	22	57	30	87	58	28	24
Glenn	50	—	—	—	—	10	—	—	—	—	—	—	—
Humboldt	268	24	—	14	10	66	—	10	—	12	17	—	—
Imperial	213	20	—	17	—	45	—	—	—	16	17	—	—
Inyo	41	—	—	—	—	12	—	—	—	—	—	—	—
Kern	1,099	70	28	94	41	300	15	44	30	54	60	30	26
Kings	162	13	—	18	—	28	—	—	—	12	11	—	—
Lake	197	10	—	15	—	60	—	—	—	—	11	—	—
Lassen	33	—	—	—	—	11	—	—	—	—	—	—	—
Los Angeles	14,164	1,179	346	1,380	603	2,814	317	507	387	1,053	716	527	401
Madera	205	14	—	16	—	49	—	15	—	15	—	—	—
Marin	500	42	15	35	22	107	16	22	15	39	21	—	—
Mariposa	39	—	—	—	—	11	—	—	—	—	—	—	—
Mendocino	192	11	—	18	—	42	—	—	—	19	—	—	—
Merced	359	27	—	39	14	86	—	10	—	32	12	—	13
Modoc	18	—	—	—	—	—	—	—	—	—	—	—	—
Mono	10	—	—	—	—	—	—	—	—	—	—	—	—
Monterey	573	56	12	38	25	105	18	25	—	37	34	16	16
Napa	268	13	11	16	14	55	—	11	—	18	15	—	—
Nevada	241	18	—	12	10	50	—	—	—	13	21	—	—
Orange	4,518	358	124	380	196	973	104	173	137	324	217	118	108
Placer	707	55	26	51	28	144	16	29	20	45	45	14	21
Plumas	29	—	—	—	—	—	—	—	—	—	—	—	—
Riverside	3,481	255	110	324	132	796	62	117	111	245	203	79	82
Sacramento	2,452	187	61	229	93	598	42	79	45	192	105	66	67
San Benito	80	—	—	—	—	19	—	—	—	—	—	—	—
San Bernardino	2,830	243	77	287	125	613	42	81	75	169	134	65	75
San Diego	4,958	389	125	461	201	1,083	91	175	127	322	268	118	104
San Francisco	1,362	92	30	129	51	294	22	37	31	94	62	57	19
San Joaquin	1,102	64	25	102	49	267	40	27	32	60	62	21	26
San Luis Obispo	493	44	16	41	19	108	10	17	14	28	31	—	—
San Mateo	1,190	103	33	108	50	243	21	51	31	90	63	39	38
Santa Barbara	688	52	35	63	39	123	15	28	19	47	48	14	—
Santa Clara	2,383	173	67	204	99	471	58	102	57	164	119	73	63
Santa Cruz	423	32	11	30	25	81	12	11	10	26	20	—	—
Shasta	391	30	—	32	20	93	14	13	—	30	17	—	—
Sierra	—	—	—	—	—	—	—	—	—	—	—	—	—
Siskiyou	135	14	—	—	—	34	—	—	—	11	11	—	—
Solano	753	48	19	73	27	205	15	18	—	58	44	16	21
Sonoma	933	75	32	60	41	213	17	47	23	66	43	24	21
Stanislaus	806	56	13	82	35	183	17	26	22	55	42	15	19
Sutter	165	10	—	13	—	43	—	—	—	—	11	—	—
Tehama	166	—	—	17	—	47	—	—	—	10	—	—	—
Trinity	40	—	—	—	—	12	—	—	—	—	—	—	—
Tulare	567	45	13	41	22	137	15	23	19	35	37	18	14
Tuolumne	151	—	—	16	—	29	—	—	—	13	—	—	—
Ventura	1,197	110	31	97	70	229	26	40	32	103	53	24	31
Yolo	303	19	—	20	14	64	—	12	—	29	12	—	—
Yuba	101	—	—	—	—	22	—	—	—	—	12	—	—

*Note that these numbers are listed differently than in previous *California Cancer Facts & Figures* publications. These numbers represent actual cancer related deaths from 2012, the year for which most recent data is available. **NHL: Non-Hodgkin Lymphoma.

Excludes non-melanoma skin cancers and carcinoma *in situ*, except bladder. Death counts of 10 or less are suppressed.

Source: California Cancer Registry, California Department of Public Health.

Prepared by the California Department of Public Health, California Cancer Registry. Please visit the California Cancer Registry website at ccrca.org for more information.

Cancer Risk

Who is at risk of developing cancer?

Anyone can develop cancer. Since the risk of being diagnosed with cancer increases with age, most cases occur in adults who are middle aged or older. About 77% of all cancers are diagnosed in persons 55 years of age and older. Cancer researchers use the word “risk” in different ways, most commonly expressing risk as lifetime risk or relative risk. In this publication, *lifetime risk* refers to the probability that an individual will develop or die from cancer over the course of a lifetime, from birth to death. In the US, men have slightly less than a 1 in 2 lifetime risk of developing cancer; for women, the risk is a little more than 1 in 3. The often-cited 1 in 8 risk for female breast cancer represents a newborn’s likelihood of eventually being diagnosed with invasive breast cancer during her lifetime. This statistic does not apply to women of all ages. For example, the probability of being diagnosed with breast cancer over any 20-year period is much lower than commonly believed – 1 in 21 women will be diagnosed with breast cancer from ages 45 through 64 if cancer-free at age 45. For women cancer-free at 65, one in 14 women will be diagnosed with breast cancer between the ages of 65 and 84. It is important to note that these estimates are based on the average experience of the general population and may overestimate or underestimate individual risk because of differences in exposure (e.g., smoking) and/or genetic susceptibility.

Relative risk is a measure of the strength of the relationship between a risk factor and cancer. It compares the risk of developing cancer in persons with a certain exposure or trait to the risk in persons who do not have this characteristic. Male smokers are about 23 times more likely to develop lung cancer than non-smokers, so their relative risk is 23. Most relative risks are not this large. For example, women who have a first-degree relative (mother, sister, or daughter) with a history of breast cancer are about two times more likely to develop breast cancer than women who do not have this family history.

Causes of Cancer

All cancers involve the malfunction of genes that control cell growth and division. A small proportion of cancers are strongly hereditary, in that an inherited genetic alteration confers a very high risk of developing one or more specific types of cancer. Inherited factors play a larger role in determining risk for some cancers (e.g., colorectal, breast, and prostate); however, heredity appears to be the dominant cause of only about 5% of cancers. Many familial cancers arise from the interplay between common gene variations and lifestyle/environmental risk factors; however, most cancers do not result from inherited genes but from damage to genes occurring during a person’s lifetime.

Genetic damage may result from internal factors (such as hormones or the metabolism of nutrients within cells), or external factors (such as tobacco, or excessive exposure to chemicals, sunlight, or ionizing radiation). Exposure to tobacco smoke significantly increases cancer risk, and is associated with an estimated 30% of all cancers, including 85% of lung cancers. As many as 40% of all cancers are associated with combinations of poor diet, inactivity, elevated body weight, excessive alcohol consumption, and high salt intake – collectively referred to as unhealthy lifestyle factors.

Just as there are many different cancers, there are many factors that contribute to an individual’s risk of developing the disease. Therefore, it is extremely difficult to point to any one factor as the cause. The timing and duration of cancer-causing exposures impact a person’s risk, and exposures to the developing child during the prenatal period or the first years of life may be especially harmful. Although science has demonstrated that exposure to certain substances or circumstances will increase an individual’s chance of getting cancer, the disease is never a certain outcome of any particular exposure.

Estimates vary on the contribution to cancer associated with exposure to other environmental carcinogenic agents, variously estimated to be associated with 2% to 15% of all cancers. That includes exposures to certain viruses, bacteria, workplace carcinogens, radiation from sunlight, radon, or medical imaging, which sometimes involve many relatively small doses that accumulate over a long time. Certain cancers are related to infectious agents, such as the human papillomavirus (HPV), the hepatitis B virus (HBV), the hepatitis C virus (HCV), the human immunodeficiency virus (HIV), and *Helicobacter pylori* (*H. pylori*); many of these cancers could be prevented through behavioral changes, vaccines, or antibiotics.

Increases in radiation exposures from the tremendous growth of diagnostic radiation imaging, such as CT scans and fluoroscopy, have raised serious concerns, particularly for the pediatric population. Losses in the ozone layer may give rise to more skin cancers caused by sun radiation. Long-term exposures to some consumer products and environmental pollutants may similarly increase the risk of cancer through routes that have not yet been well studied. Such substances, including some pesticides, plasticizers, and nano-materials, may cause subtle hormonal or other physiological alterations that could contribute to the development of cancer in later life.

Exactly why one individual develops cancer and another person with very similar life experiences does not is beyond current scientific understanding. Better understanding is key to preventing and treating cancers, and it is the focus of rigorous scientific research. Reducing one’s chances of developing cancer requires adopting a healthy lifestyle, reducing exposures to known carcinogens, and, if there is a family history of cancer, talking to one’s doctor on a regular basis.

Lifestyle Factors and Cancer Prevention

A substantial proportion of cancers could be prevented. The most important ways to reduce cancer risk are to avoid tobacco, maintain a healthy weight, be physically active on a regular basis, and eat a mostly plant-based diet, consisting of a variety of vegetables and fruit, whole grains, and limited amounts of red and processed meats. Protecting skin from excessive sun exposure and avoiding indoor tanning are also important in reducing the risk of skin cancers. Regular cancer screenings, when appropriate, also play a vital role in cancer prevention. The lifestyle factors that play a role in cancer prevention are highlighted in what follows: 1) Nutrition, Obesity, and Physical Activity, 2) Tobacco Use, and 3) Cancer Screening.

Nutrition, Obesity, and Physical Activity

Poor nutrition, obesity, and physical inactivity are major risk factors for cancer, second only to tobacco use. For people who do not smoke – which is the majority of Americans – maintaining a healthy weight by being physically active and consuming a healthy diet is the most important way to reduce their lifetime cancer risk. Although genetic inheritance plays a role in the risk of some individuals developing cancer, non-inherited factors have a larger impact on cancer risk for the population as a whole.

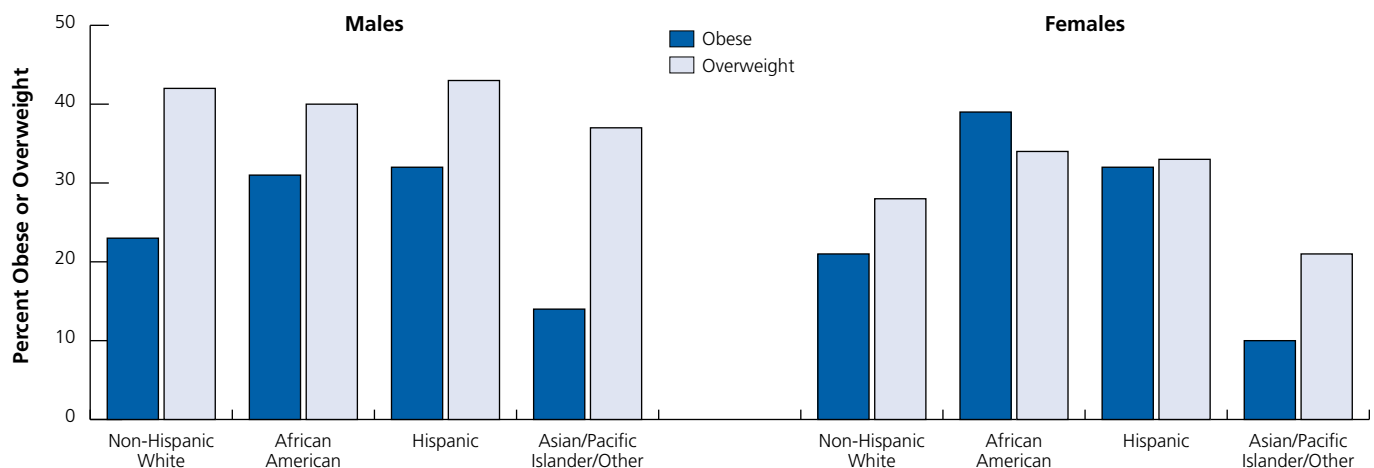
In the past decade, research has linked an increasing number of cancers to obesity. In a 2003 American Cancer Society study published in the *New England Journal of Medicine*, researchers documented the association between body mass index (BMI, a measure of body weight status) and death from many forms of cancer, estimating that 90,000 cancer deaths nationwide each

year are related to excess weight. The study lends additional evidence to the idea that poor diet, obesity, and physical inactivity are critical pieces of the cancer puzzle.

The World Cancer Research Fund estimates about one-quarter to one-third of new cancer cases expected to occur in the US in 2015 will be related to overweight or obesity, physical inactivity, and poor nutrition. The number of overweight and obese adults has been increasing over the past several decades among men and women, and people of all ages, races, and educational backgrounds. While recent data suggest that the increase in obesity rates may be leveling off in some groups, rates continue to present a public health concern. According to the National Center for Health Statistics, almost two-thirds of US adults are so overweight that it poses a risk to their health. In California, 60.1% of adults are overweight or obese. In children, overweight and obesity rates have more than doubled over the past two decades, and in 2010, more than one-third of children and adolescents in the US were overweight or obese. These children are at increased risk for becoming obese adults, which could increase future cancer rates.

There is strong scientific evidence that healthy dietary patterns, in combination with regular physical activity, are needed to maintain a healthy body weight and to reduce cancer risk, as well as prevent other chronic diseases. Eating a diet high in fruits and vegetables is associated with a lower risk of cancers of the mouth and pharynx, esophagus, lung, stomach, colon and rectum. Healthy eating includes consuming at least 2½ cups of fruits and vegetables each day. Unfortunately only 26% of California adults

Figure 1. Adult Obesity and Adult Overweight by Race/Ethnicity and Sex in California, 2013



Note: Data are weighted to the 2010 California population.

Source: California Behavioral Risk Factor Survey. Prepared by the California Department of Public Health, California Cancer Registry.

American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention

Individual choices

Achieve and maintain a healthy weight throughout life.

- Be as lean as possible throughout life without being underweight.
- Avoid excess weight gain at all ages. For those who are currently overweight or obese, losing even a small amount of weight has health benefits and is a good place to start.
- Engage in regular physical activity and limit consumption of high-calorie foods and beverages as key strategies for maintaining a healthy weight.

Adopt a physically active lifestyle.

- Adults should engage in at least 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity physical activity each week, or an equivalent combination, preferably spread throughout the week.
- Children and adolescents should engage in at least 1 hour of moderate- or vigorous-intensity physical activity each day, with vigorous-intensity activity at least three days each week.
- Limit sedentary behavior such as sitting, lying down, and watching television and other forms of screen-based entertainment.
- Doing any intentional physical activity above usual activities, no matter what one’s level of activity, can have many health benefits.

Consume a healthy diet, with an emphasis on plant sources.

- Choose foods and beverages in amounts that help achieve and maintain a healthy weight.
- Limit consumption of processed meat and red meats.
- Eat at least 2½ cups of vegetables and fruits each day.
- Choose whole-grain instead of refined-grain products.

If you drink alcoholic beverages, limit consumption.

- Drink no more than one drink per day for women or two per day for men.

Community Action

It is recommended that public, private, and community organizations work collaboratively at national, state, and local levels to apply policy and environmental changes that:

- Increase access to affordable, healthy foods in communities, worksites, and schools; decrease access to and marketing of foods and beverages of low nutritional value, particularly to youth.
- Provide safe, enjoyable, and accessible environments for physical activity in schools and worksites, and for transportation and recreation in communities.

Examples of Moderate and Vigorous Physical Activity

	Moderate-intensity Activities	Vigorous-intensity Activities
Exercise and leisure	Walking, dancing, leisurely bicycling, ice and roller skating, horseback riding, canoeing, yoga	Jogging or running, fast bicycling, circuit weight training, aerobic dancing, martial arts, jumping rope, swimming
Sports	Volleyball, golf, softball, baseball, badminton, doubles tennis, downhill skiing	Soccer, field or ice hockey, lacrosse, singles tennis, racquetball, basketball, cross-country skiing
Home activities	Mowing the lawn, general yard and garden maintenance	Digging, carrying, and hauling, masonry, carpentry
Occupational activity	Walking and lifting as part of the job (custodial work, farming, auto or machine repair)	Heavy manual labor (forestry, construction, fire-fighting)

reported eating fruits and or vegetables 5 or more times per day in 2013. In addition, only a minority of the state's youth met these dietary recommendations.

Along with healthy eating, regular physical activity is one of the best ways to prevent chronic disease. Physical activity reduces the risk of breast, colon, and, possibly, endometrial and prostate cancers, and may reduce the risk of many other cancers through its role in weight management. The American Cancer Society recommends that adults participate in moderate physical activity for at least 150 minutes per week, or at least 75 minutes of vigorous activity (or a combination thereof, preferably spread throughout the week). For children and adolescents, the Society recommends at least 60 minutes per day of moderate- or vigorous-intensity physical activity, with vigorous-intensity activity at least three days a week.

The American Cancer Society Guidelines on Nutrition and Physical Activity for Cancer Prevention (opposite page) are based on a comprehensive evidence-based review. A recent study found that dietary and lifestyle behaviors consistent with those guidelines are associated with lower mortality rates for all causes of death combined, and for cancer and cardiovascular diseases specifically. This makes it all the more important to encourage and support Californians in their efforts to eat a healthier diet and lead a more physically active lifestyle.

While reducing cancer risk requires promoting the benefits of healthy eating, physical activity, and weight control, the American Cancer Society also recognizes the importance of efforts to make it easier for people to make healthy lifestyle choices. Therefore, the guidelines include recommendations for community actions to create a supportive physical and social environment that promotes and facilitates healthy behaviors, removing or reducing barriers that make it difficult to follow diet and activity recommendations.

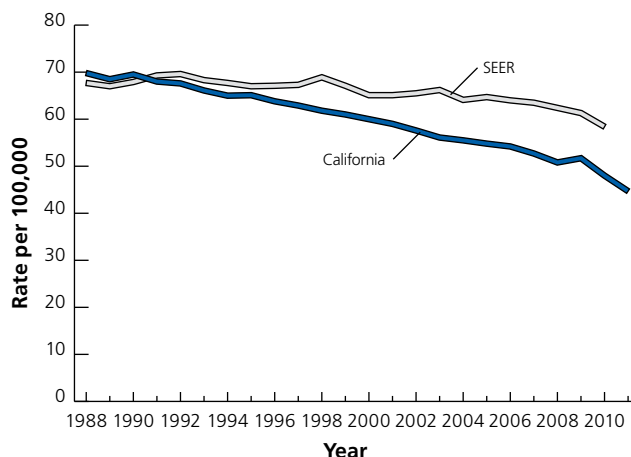
Tobacco Use

Tobacco-related diseases remain the world's most preventable cause of death. Since the first US Surgeon General's report on smoking and health in 1964, there have been more than 15 million premature deaths attributable to smoking in the US. Tobacco use is responsible for nearly 1 in 5 deaths in the country. Tobacco-related deaths are the single most preventable cause of death in California.

Health Consequences of Tobacco Use

Half of all those who continue to smoke will die from smoking-related diseases. About 85% of lung cancers are caused by cigarette smoking. Lung cancer alone kills nearly 13,000 Californians each year, more than prostate, breast, and colon and rectum cancers combined. Many other cancers are caused by tobacco as well. Smoking increases the risk of cancer of the

Figure 2. Trends in Lung Cancer Incidence in California and SEER Areas Other than California, 1988-2011



Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

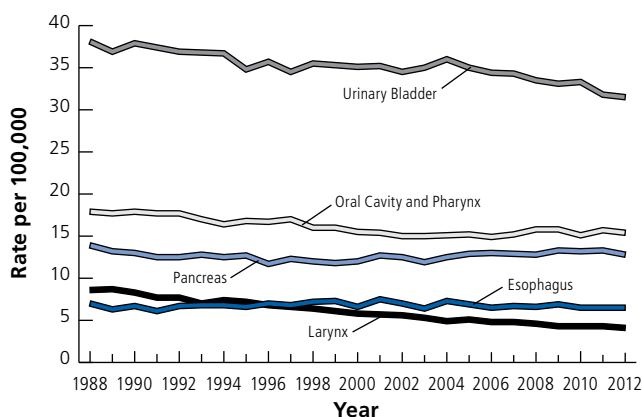
nasopharynx, nasal cavity, and paranasal sinuses, lip, oral cavity, pharynx, larynx, lung, esophagus, pancreas, uterine cervix, ovary (mucinous), kidney, bladder, and stomach, as well as colorectal cancer and acute myeloid leukemia. Additionally, smoking is a major cause of heart disease, cerebrovascular disease, chronic bronchitis, and emphysema, and is associated with gastric ulcers.

Smoking accounts for at least 30% of all cancer deaths, including 87% of lung cancer deaths among men and 70% of lung cancer deaths among women. The risk of the disease is just as high in smokers of "light" or "low-tar" yield cigarettes as in those who smoke "regular" or "full-flavored" products. The risk of developing lung cancer is about 23 times higher in male smokers and 13 times higher in female smokers, compared to nonsmokers.

Lung cancer incidence rates in California decreased by 37% from 1988 to 2012, while rates in the rest of the country dropped by only 16% between 1988 and 2011. Rates for other smoking-related cancers are declining as well. These achievements are due, in large part, to the success of California tobacco control initiatives.

Cigar smoking increases the risk of death from several cancers, including cancer of the lung, oral cavity (lip, tongue, mouth, throat), esophagus (the tube connecting the mouth to the stomach), and larynx (voice box). Studies have shown that male cigar smokers are 4 to 10 times more likely to die from oral and laryngeal cancers than nonsmokers. Cigar smokers may spend up to an hour smoking a single large cigar, which can contain as much tobacco as a pack of cigarettes. Smoking more cigars each day or inhaling cigar smoke leads to more exposure and higher risks.

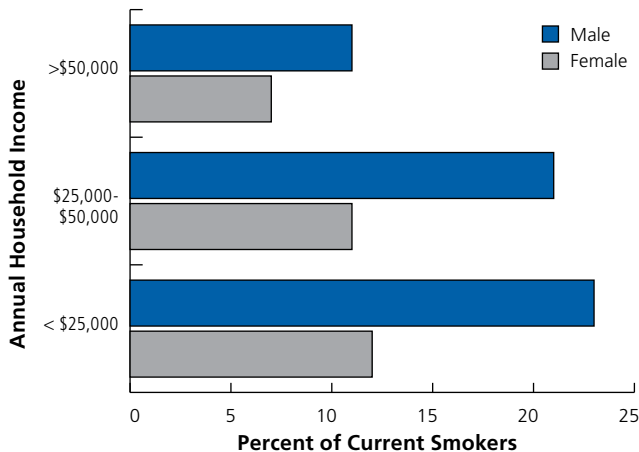
Figure 3. Trends in the Incidence of Smoking-related Cancers Other than Lung among Men in California, 1988-2012



Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry.

Figure 4. Adult Smoking by Annual Household Income and Sex in California, 2013



Note: Data are weighted to the 2010 California population.

Source: California Behavioral Risk Factor Survey and California Adult Tobacco Survey. Prepared by the California Department of Public Health, California Cancer Registry.

The most serious health effect of spit tobacco is an increased risk of cancer of the mouth and pharynx and of leukoplakia. Oral cancer occurs several times more frequently among snuff dip-pers compared with non-tobacco users. The risk of cancer of the cheek and gums may increase nearly 50-fold among long-term snuff users.

Smoking Trends

Smoking rates among California adults declined steadily among both men and women from 1989 to 2010. In 2009, 13% of California adults smoked, and in 2012, 12% still smoked. Overall smoking rates have declined for middle school and high school students. In California during 2004, 3.9% of middle school students and 13.2% of high school students reported smoking during the past 30 days. The smoking prevalence in California is lower than what is experienced by the rest of the US.

Previously, in California, 18- to 24-year-olds were smoking at an increasing rate and were recognized as the fastest-growing age group using tobacco. Tobacco companies have been targeting them in earnest as the smokers of the future. Fortunately, the smoking rate for this age group has been decreasing in the past few years: 17% in 2008, 13% in 2009, and 12% in 2010. However, in 2012 and 2013, the smoking rate for this age group had increased slightly at the same rate of 13.5%.

Smoking prevalence among California adults was highest among those with annual household incomes below \$25,000. Additionally, prevalence of smoking seen in males was higher as compared to females among all levels of income.

Given that lung cancer is the most common fatal cancer in both men and women in the US, it is important to recognize the role

that the tobacco industry has played in targeting youth, the future generation of smokers in the eyes of Big Tobacco. According to the CDC, in 2011, cigarette companies spent \$8.37 billion on advertising and promotional expenses in the US, the equivalent of \$23 million per day, or \$27 for every person (adults and children) in the country. The result: nearly 4,000 people under the age of 18 smoke their first cigarette each day, and it is estimated that 1,000 of them become daily smokers.

Reducing Tobacco Use and Exposure

In 2000, the US Surgeon General outlined the goals and components of comprehensive statewide tobacco control programs. These programs seek to: prevent the initiation of tobacco use among youth, promote quitting at all ages, eliminate nonsmokers' exposure to secondhand smoke, and identify and eliminate the disparities related to tobacco use and its effects among different population groups.

The CDC recommends funding levels for comprehensive tobacco use prevention and cessation programs for all 50 states and the District of Columbia. In fiscal year 2013, five states allocated 50% or more of CDC-recommended funding levels for tobacco control programs. States that have previously invested in comprehensive tobacco control programs, such as California, Massachusetts, and Florida, have reduced smoking rates and saved millions of dollars in tobacco-related health care costs. Recent federal initiatives in tobacco control, including national legislation ensuring coverage of some clinical cessation services, regulation of tobacco products, and tax increases, hold promise for reducing tobacco use. Provisions in the Affordable Care Act ensure at least minimum coverage of evidence-based cessation treatments, including pharmacotherapy and cessation counsel-

ing to previously uninsured tobacco users, pregnant Medicaid recipients, and eligible Medicare recipients. The Centers for Medicare and Medicaid Services subsequently issued a decision memo changing the eligibility requirement for Medicare recipients, so that they no longer have to be diagnosed with a smoking-related disease in order to access cessation treatments. In 2014, state Medicaid programs could no longer exempt cessation pharmacotherapy from prescription drug coverage. Several provisions of the Family Smoking Prevention and Tobacco Control Act, which for the first time grants the US Food and Drug Administration (FDA) the authority to regulate the manufacturing, selling, and marketing of tobacco products, went into effect last year.

Kicking the Habit

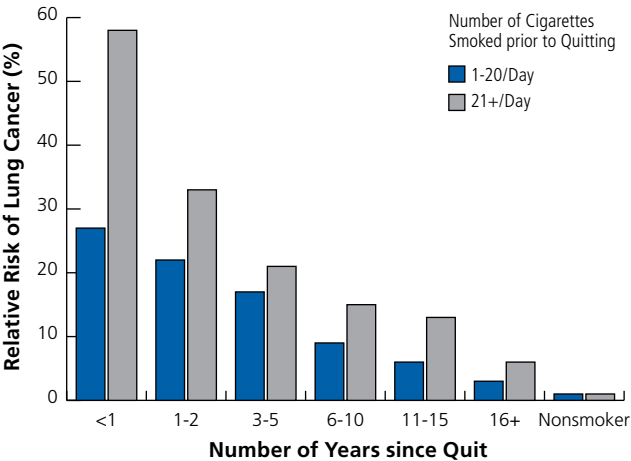
In 2013, 57% of adult smokers in California reported that they tried to quit in the past year. Nicotine, the drug in tobacco, causes addiction with pharmacologic and behavioral processes similar to those that determine addiction to cocaine and heroin. Because of this, quitting can be a difficult challenge; nonetheless, millions of Californians have kicked the habit. For those who do quit, the risk of lung cancer decreases over time. After 15 years, the risk is only slightly higher than among persons who have never smoked, even among those who smoked more than a pack a day.

Secondhand Smoke

In 2007, the US Surgeon General’s report on environmental tobacco smoke (ETS) found that there is no risk-free level of secondhand smoke (SHS) exposure. Even brief exposure can be dangerous. It is estimated that more than 88 million nonsmoking Americans 3 years of age and older were exposed to SHS in 2007-2008. Each year, about 3,400 nonsmoking adults in the US die of lung cancer as a result of breathing secondhand smoke. ETS can be particularly harmful to children. In 2013, 64% of California households completely prohibited smoking in the home.

Information on the tobacco control efforts of the American Cancer Society Cancer Action NetworkSM (ACS CAN), the Society’s non-profit, nonpartisan advocacy affiliate, can be found on page 29.

Figure 5. Effect of Smoking Cessation on Lung Cancer Risk among Men



Source: Cancer Rates and Risks, 4th Edition, National Cancer Institute, 1996. Prepared by the California Department of Public Health, California Cancer Registry.

Cancer Screening

Screening offers the ability for secondary prevention by detecting cancer early, before symptoms appear. Regular screening tests that allow the early detection and removal of precancerous growths are known to reduce mortality for cancers of the cervix and colon and rectum. A heightened awareness of changes in the breast, skin, or testicles may also result in the detection of these tumors at earlier stages. Screening for colorectal (also known as colon and rectum cancer) and cervical cancers can help prevent the disease by allowing for the detection and removal of precancerous lesions.

Early diagnosis can also help save lives by identifying cancers when they require less extensive treatment and have better outcomes. Five-year relative survival rates for common cancers, such as breast, prostate, colon and rectum, cervix, and melanoma of the skin, are 92% to 100% if they are discovered before spreading beyond the organ where the cancer began. Following American Cancer Society cancer screening guidelines and encouraging others to do so can help save lives. Please see Table 10 on page 17.

Cancer Stages at Diagnosis

Staging describes the extent or spread of cancer at the time of diagnosis. Proper staging is essential in determining the choice of therapy and in assessing prognosis. A cancer’s stage is based on the size or extent of the primary (main) tumor and whether it has spread to other areas of the body. A number of different staging systems are used to classify tumors. A system of summary

staging (*in situ*, local, regional, and distant) is used for descriptive and statistical analysis of tumor registry data. Diagnosis at an early stage is a tumor diagnosed at *in situ* or a localized stage. It is an indication of screening and early detection. Diagnosis at a late stage is a tumor diagnosed at regional or distant stage and is associated with poorer prognosis.

Table 6. Five-year Relative Survival by Stage at Diagnosis in California, 2003-2012

Cancer Type	All Stages	Localized	Regional	Distant
Female Breast	91.0%	99.0%	85.7%	27.8%
Cervix Uteri	70.4%	92.5%	59.3%	18.9%
Uterus*	83.4%	96.3%	69.2%	18.2%
Ovary	48.6%	91.6%	76.5%	30.2%
Prostate	100.0%	100.0%	100.0%	29.9%
Testis	94.2%	98.7%	95.3%	70.7%
Oral & Pharynx	65.9%	84.4%	63.4%	38.4%
Colon & Rectum	67.3%	92.1%	71.4%	13.4%
Pancreas	7.1%	27.1%	9.9%	2.3%
Liver	19.1%	30.5%	11.7%	3.4%
Lung & Bronchus	17.5%	56.7%	27.9%	4.3%
Melanoma	91.7%	98.5%	62.8%	16.3%
Hodgkin Lymphoma	84.4%	90.0%	91.9%	74.9%
NHL**	69.0%	82.2%	72.4%	61.0%
Leukemia***	56.6%	—	—	56.6%
Childhood (0-14 years)	84.0%	—	—	84.0%
Young Adult (15-19 years)	68.0%	—	—	68.0%
Adult (20+ years)	52.0%	—	—	52.0%

*Uterus includes Corpus Uteri and Uterus, NOS. **NHL: Non-Hodgkin Lymphoma. ***All leukemias are staged as distant disease; thus survival cannot be calculated for other stages. Note: Follow-up is through December 2012. Cancers that were unstaged at time of diagnosis are excluded.

Source: California Cancer Registry, California Department of Public Health.

Prepared by the California Department of Public Health, California Cancer Registry. Please visit the California Cancer Registry website at ccrca.org for more information.

For most cancers, clinicians typically use the TNM cancer staging system, which assesses tumors in three ways: extent of the primary tumor (T), absence or presence of regional lymph node involvement (N), and absence or presence of distant metastases (M). Once the T, N, and M categories are determined, a stage of 0, I, II, III, or IV is assigned, with stage 0 being *in situ*, stage I being early and stage IV being the most advanced disease. Some cancers have alternative staging systems (e.g., leukemia). As the molecular properties of cancer have become better understood, tumor biological markers and genetic features have been incorporated into prognostic models, treatment plans, and/or stage for some cancer sites.

In Situ

The tumor is at the earliest stage and has not spread or extended through the first layer of cells (the basement membrane) in the area in which it is growing.

Localized

The tumor has broken through the basement membrane, but is still confined to the organ in which it is growing.

Regional

The tumor has spread to lymph nodes or adjacent tissues.

Table 7. Three Common Cancers: New Cases and Percent of Early Stage Cases at Diagnosis, California, 2012

Cancer Site	Total New Cases Diagnosed	Percent Early Stage
Female Breast	30,896	71.0%
Prostate	19,166	74.5%
Colorectal	14,682	42.4%

Source: California Cancer Registry, California Department of Public Health.

Prepared by the California Department of Public Health, California Cancer Registry

Distant

The tumor has spread to other parts of the body (metastasized). An invasive tumor has spread beyond the layer of tissue in which it developed and is growing into surrounding, healthy tissues.

How does staging impact survival?

Survival statistics vary greatly by cancer type and stage at diagnosis. Relative survival compares survival among cancer patients to that of people not diagnosed with cancer who are of the same age, race, and sex. It represents the percentage of cancer patients who are alive after some designated time period (usually five years) relative to persons without cancer. It does not distinguish between patients who have been cured and those who have

Table 8. Percent of Cancer Cases Diagnosed at Early Stage, California and Selected Counties, 2012

	Non-Hispanic White		African American		Hispanic		Asian/Pacific Islander	
	Total Cases	% Early	Total Cases	% Early	Total Cases	% Early	Total Cases	% Early
Breast- Females								
California	18,397	72.3%	2,005	66.7%	5,725	65.3%	4,227	75.1%
Alameda	602	74.6%	190	70.5%	138	63.0%	350	74.6%
Contra Costa	647	72.2%	97	75.3%	104	70.2%	165	75.2%
Fresno	379	71.0%	43	53.5%	178	69.1%	45	77.8%
Kern	317	68.1%	26	73.1%	107	58.9%	29	72.4%
Los Angeles	3,437	72.4%	854	66.3%	1,920	64.6%	1,248	74.7%
Orange	1,720	72.9%	31	67.7%	407	66.1%	400	73.0%
Riverside	1,035	70.8%	113	68.1%	379	64.9%	103	74.8%
Sacramento	901	74.3%	118	66.1%	154	67.5%	182	74.7%
San Bernardino	735	69.8%	140	59.3%	418	64.1%	85	80.0%
San Diego	1,767	72.6%	97	68.0%	488	68.0%	279	73.1%
San Francisco	327	74.6%	45	68.9%	77	74.0%	278	79.1%
San Joaquin	285	64.6%	50	58.0%	110	64.5%	62	67.7%
San Mateo	478	79.9%	21	57.1%	80	71.3%	236	78.0%
Santa Clara	842	72.0%	26	76.9%	219	65.8%	413	74.8%
Ventura	593	74.0%	13	—	135	68.9%	51	76.5%
Prostate- Males								
California	11,085	75.1%	1,839	76.5%	3,418	73.6%	1,456	74.8%
Alameda	416	80.3%	171	84.8%	94	78.7%	127	78.0%
Contra Costa	461	84.8%	104	84.6%	66	74.2%	65	75.4%
Fresno	210	81.0%	25	88.0%	92	68.5%	18	66.7%
Kern	224	71.9%	26	73.1%	62	62.9%	—	—
Los Angeles	1,789	70.3%	693	70.4%	1,200	67.6%	389	66.3%
Orange	1,051	75.3%	32	78.1%	208	75.5%	117	79.5%
Riverside	730	77.8%	113	77.0%	218	79.4%	32	78.1%
Sacramento	481	75.7%	103	76.7%	64	81.3%	54	77.8%
San Bernardino	501	71.3%	126	79.4%	234	75.6%	37	70.3%
San Diego	997	73.0%	92	76.1%	253	71.5%	86	72.1%
San Francisco	170	81.2%	55	78.2%	34	85.3%	148	77.7%
San Joaquin	214	76.6%	43	76.7%	67	86.6%	25	96.0%
San Mateo	282	76.6%	25	84.0%	56	91.1%	78	79.5%
Santa Clara	530	83.0%	47	91.5%	144	84.7%	160	83.1%
Ventura	296	67.9%	12	—	79	77.2%	10	—
Invasive Cervix- Females								
California	573	45.5%	105	39.0%	541	40.3%	212	47.6%
Alameda	19	63.2%	11	—	19	—	11	—
Contra Costa	17	—	—	—	—	—	—	—
Fresno	10	—	—	—	18	—	—	—
Kern	22	50.0%	—	—	11	—	—	—
Los Angeles	110	50.9%	43	32.6%	193	45.6%	70	47.1%
Orange	37	35.1%	—	—	38	39.5%	21	57.1%
Riverside	39	46.2%	—	—	30	43.3%	—	—
Sacramento	27	40.7%	—	—	—	—	11	—
San Bernardino	42	35.7%	—	—	51	35.3%	—	—
San Diego	48	47.9%	—	—	39	—	12	—
San Francisco	11	—	—	—	—	—	12	—
San Joaquin	12	—	—	—	—	—	—	—
San Mateo	—	—	—	—	10	—	12	—
Santa Clara	17	—	—	—	13	—	17	—
Ventura	15	—	—	—	16	—	—	—
Colon & Rectum- Males								
California	4,358	42.7%	559	41.3%	1,576	39.8%	1,015	43.0%
Alameda	139	42.4%	48	52.1%	30	—	72	33.3%
Contra Costa	161	39.8%	20	55.0%	34	41.2%	29	44.8%
Fresno	91	42.9%	—	—	66	39.4%	—	—
Kern	71	38.0%	—	—	34	35.3%	—	—
Los Angeles	832	39.7%	222	41.9%	548	40.3%	351	45.3%
Orange	374	46.3%	—	—	98	40.8%	114	44.7%
Riverside	311	45.3%	48	50.0%	94	48.9%	30	43.3%
Sacramento	180	40.0%	27	37.0%	36	44.4%	45	42.2%
San Bernardino	227	44.5%	41	31.7%	118	41.5%	26	42.3%
San Diego	419	42.0%	39	25.6%	116	31.9%	52	36.5%
San Francisco	66	34.8%	27	37.0%	15	—	89	50.6%
San Joaquin	60	48.3%	—	—	27	37.0%	12	—
San Mateo	77	46.8%	—	—	21	47.6%	38	52.6%
Santa Clara	207	46.4%	—	—	54	35.2%	86	33.7%
Ventura	115	40.9%	—	—	31	45.2%	—	—
Colon & Rectum- Females								
California	4,042	41.3%	526	42.0%	1,345	41.0%	985	45.5%
Alameda	119	45.4%	66	45.5%	29	37.9%	66	48.5%
Contra Costa	167	46.7%	24	—	25	40.0%	25	48.0%
Fresno	65	46.2%	—	—	47	44.7%	11	—
Kern	70	42.9%	—	—	26	38.5%	—	—
Los Angeles	759	35.6%	223	40.8%	488	41.4%	306	44.4%
Orange	393	46.3%	—	—	80	40.0%	109	44.0%
Riverside	255	39.6%	31	38.7%	88	37.5%	27	44.4%
Sacramento	180	37.8%	32	31.3%	37	40.5%	40	—
San Bernardino	191	50.8%	37	45.9%	92	48.9%	26	53.8%
San Diego	350	41.7%	24	45.8%	94	46.8%	68	35.3%
San Francisco	70	51.4%	12	—	23	—	77	58.4%
San Joaquin	68	48.5%	—	—	26	—	19	—
San Mateo	79	53.2%	—	—	19	—	42	61.9%
Santa Clara	167	41.9%	13	—	43	41.9%	93	50.5%
Ventura	96	41.7%	—	—	37	43.2%	10	—

— Data not shown if fewer than 10 cases were reported.

Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry.

relapsed or are still in treatment. While five-year relative survival is useful in monitoring progress in the early detection and treatment of cancer, it may not predict individual prognosis and should be interpreted with caution. Additionally, five-year relative survival rates for the most recent time period are based on patients who were diagnosed from 2003 to 2012 and thus do not reflect the most recent advances in detection and treatment. Furthermore, factors that influence survival, such as treatment protocols, other illnesses, and biological and behavioral differ-

ences of individual cancers or people, cannot be taken into account in the estimation of relative survival rates.

Stage at Diagnosis in California's Counties

The percentage of cancers diagnosed at an early stage (*in situ* or localized) is an indication of screening and early detection. The 15 most populous counties listed in Table 8 on page 13 account for 80% of California's population. The numbers are actual cases reported to the California Cancer Registry for 2012.

Cancer Disparities

An overarching goal of the American Cancer Society is to eliminate disparities in the cancer burden among different segments of the US population, defined in terms of socioeconomic status (income, education, insurance status, etc.), race/ethnicity, geographic location, sex, and sexual orientation. The causes of health disparities within each of these groups are complex and include interrelated social, economic, cultural, environmental, and health system factors. However, disparities predominantly arise from inequities in work, wealth, education, housing, and overall standard of living, as well as social barriers to high-quality cancer prevention, early detection, and treatment services.

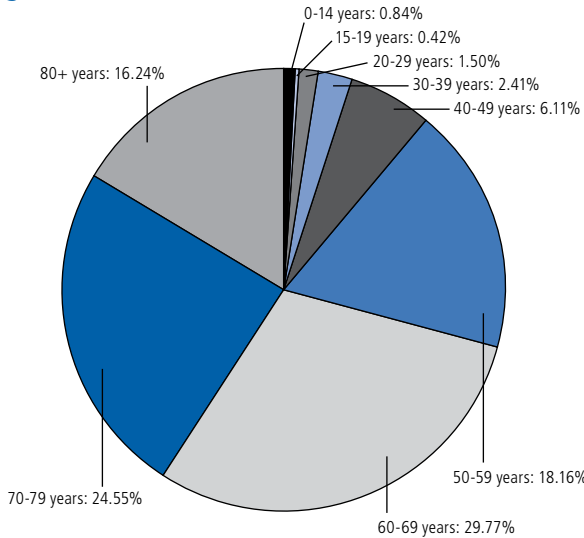
California's Diverse Population

The US Census Bureau estimates California's population to be more than 38 million. Of these, 40.9% are White alone, 6.3% are African Americans; 37.3% are Hispanics; 13.8% are Asian/Pacific

Islanders; 1.0% are American Indians and Alaskan Natives; and 0.6% are Native Hawaiians and Other Pacific Islanders. It is important to note that although cancer data in the US are primarily reported in terms of broad racial and ethnic categories, these populations are very heterogeneous with substantial variation in the cancer burden within each group.

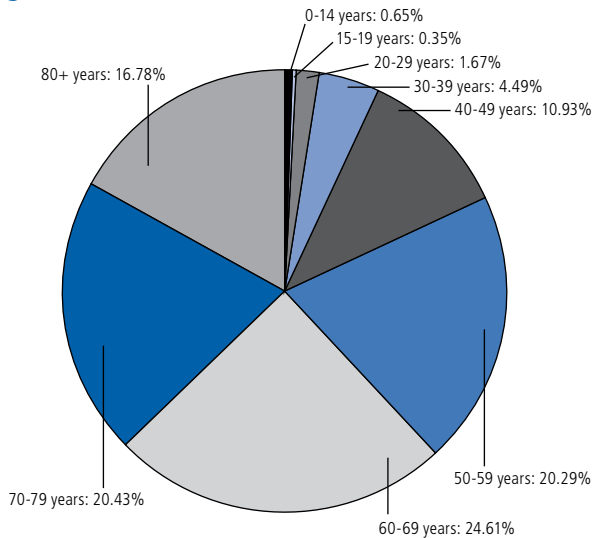
In general, the types of cancers that commonly develop are similar regardless of race/ethnicity. In most racial/ethnic groups in California, prostate, lung and bronchus, and colon and rectum cancer are among the top four cancers for men. However, lung cancer is the most common among Laotian and Vietnamese men. Among women, breast, lung and bronchus, and colon and rectum cancer are among the top four cancers. Breast cancer is the number one cancer among women of all racial/ethnic groups. Cancer is the second leading cause of death for all racial/ethnic groups combined.

Figure 6. Percentage of New Cancers Diagnosed by Age, California, 2012, Male



Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry.

Figure 7. Percentage of New Cancers Diagnosed by Age, California, 2012, Female



Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry.

Table 9. Five Most Common Cancers and Number of New Cases by Sex and Detailed Race/Ethnicity, California, 2008-2012

	Male					Female				
	1	2	3	4	5	1	2	3	4	5
Non-Hispanic White	Prostate 66,172	Lung 30,052	C&R 22,449	Melanoma 20,446	Bladder 19,499	Breast 75,553	Lung 29,894	C&R 21,189	Uterus 14,287	Melanoma 12,809
Non-Hispanic Black	Prostate 10,115	Lung 3,554	C&R 2,838	Kidney 1,289	Bladder 980	Breast 7,783	Lung 2,995	C&R 2,768	Uterus 1,457	Pancreas 857
Hispanic	Prostate 18,149	C&R 7,370	Lung 4,879	Kidney 3,894	NHL 3,851	Breast 21,510	C&R 6,090	Thyroid 4,785	Uterus 4,723	Lung 4,363
American Indian/ Alaska Native	Prostate 384	Lung 191	C&R 176	Liver 126	Kidney 121	Breast 560	Lung 202	C&R 179	Uterus 137	Kidney 75
Chinese	Prostate 2,307	Lung 1,551	C&R 1,378	Liver 749	NHL 527	Breast 3,617	C&R 1,314	Lung 1,218	Uterus 657	Thyroid 574
Japanese	Prostate 761	C&R 540	Lung 421	Bladder 246	Stomach 188	Breast 1,506	C&R 630	Lung 476	Uterus 238	Pancreas 204
Filipino	Prostate 2,543	Lung 1,425	C&R 1,185	NHL 476	Liver 434	Breast 4,680	C&R 1,191	Uterus 1,075	Lung 1,057	Thyroid 981
Hawaiian	Prostate 109	C&R 65	Lung 64	NHL 28	Bladder 24	Breast 178	C&R 50	Uterus 48	Lung 43	Thyroid 27
Korean	C&R 489	Prostate 448	Lung 420	Stomach 377	Liver 272	Breast 956	C&R 465	Lung 291	Stomach 258	Thyroid 254
Vietnamese	Lung 767	Liver 671	Prostate 622	C&R 574	NHL 210	Breast 1,193	C&R 466	Lung 431	Thyroid 288	Liver 222
Laotian	Lung 61	Liver 57	C&R 36	Prostate 27	Stomach 25	Breast 55	C&R 38	Liver 26	Thyroid 22	Lung 17
Kampuchean	Liver 71	C&R 66	Lung 54	Prostate 34	Oral 26	Breast 89	Lung 52	C&R 50	Thyroid 29	Liver 27
South Asian	Prostate 742	C&R 234	Lung 197	NHL 186	Bladder 152	Breast 1,102	Thyroid 212	C&R 189	Uterus 179	Ovary 136
Pacific Islander	Prostate 537	Lung 250	C&R 246	Liver 131	NHL 119	Breast 1,311	Uterus 376	C&R 317	Lung 265	Thyroid 264
Hmong	Lung 23	Liver 21	C&R 20	Liver 19	Stomach 13	C&R 19	Breast 18	Lung 15	Cervix 12	Uterus 11

Note: C&R: colon & rectum; NHL: Non-Hodgkin Lymphoma.

Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry.

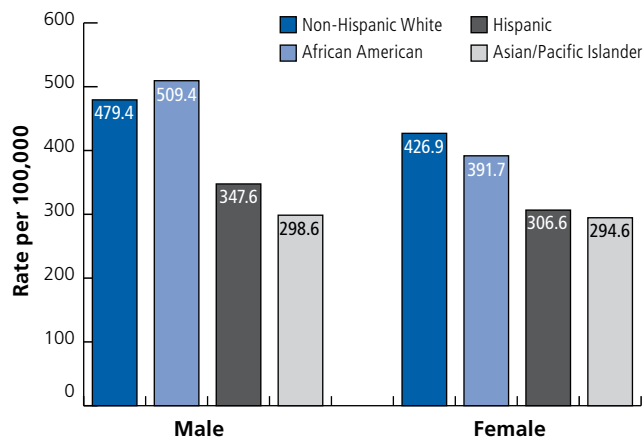
Socioeconomic Status

Nearly a quarter of California's more than 38 million residents live in poverty, according to the Census Bureau. People with lower socioeconomic status (SES) have disproportionately higher cancer death rates than those with higher SES, regardless of demographic factors such as race/ethnicity. For example, cancer mortality rates among both black and non-Hispanic white men with 12 or fewer years of education are almost 3 times higher than those of college graduates for all cancers combined and 4-5 times higher for lung cancer.

People with lower SES have higher cancer incidence rates because they are more likely to engage in behaviors that increase cancer risk, such as tobacco use, low physical activity, and poor nutrition. This is largely because of marketing strategies that

target these populations, but environmental and/or community factors that provide few opportunities for physical activity and access to fresh fruits and vegetables also contribute. In addition to a higher burden of disease, these patients are less likely to survive after a cancer diagnosis because the disease is often detected at an advanced stage and because they are less likely to receive standard treatment. Barriers to preventive care, early detection, and optimal treatment include inadequate health insurance; financial, structural, and personal barriers to health care; and low literacy rates. For example, stage II colorectal cancer patients with private insurance have better survival rates than stage I patients who are uninsured. Progress in reducing cancer death rates has been slower in people with lower SES because of the delay in the dissemination of improved early detection and treatment in this marginalized population.

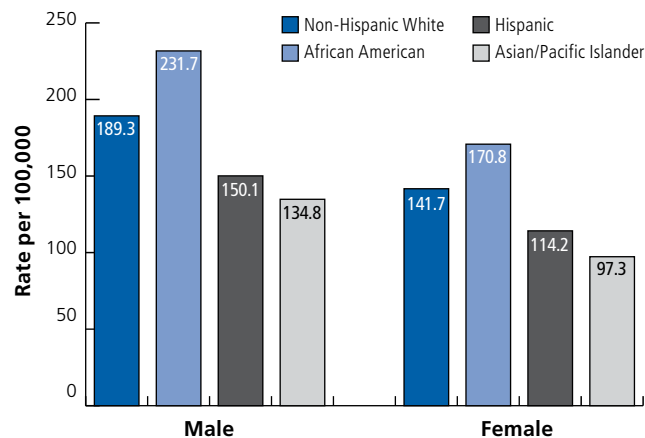
Figure 8. Cancer Incidence by Race/Ethnicity and Sex in California, 2012



Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry

Figure 9. Cancer Mortality by Race/Ethnicity and Sex in California, 2012



Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry

Racial and Ethnic Minorities and Cancer Risk

The risk of developing cancer varies considerably by race/ethnicity. African American men have the highest overall cancer rate, followed by non-Hispanic white men. Among women, non-Hispanic white women are the most likely to be diagnosed with cancer, but African American women are more likely to die of the disease. Cancer rates are considerably lower among persons of Asian/Pacific Islander origin and persons of Hispanic ethnicity than among other Californians. However, both groups have substantially higher rates of certain cancers, such as liver and stomach cancer. Hispanic women are also more likely to develop and die from cervical cancer. Research indicates that cancer rates in populations immigrating to the US tend to increase over time.

In general, cancer rates are about 30%-40% lower among persons of Asian/Pacific Islander origin and persons of Hispanic ethnicity than among non-Hispanic white Californians. However, as with African Americans, both of these groups have substantially higher rates of stomach and liver cancer. Cancer is the leading cause of death among Hispanics and Asian/Pacific Islanders and is the second leading cause of death among non-Hispanic whites and African Americans in California.

Disparities in the cancer burden among racial and ethnic minorities largely reflect obstacles to receiving health care services related to cancer prevention, early detection, and high-quality treatment, with poverty as the overriding factor. According to the 2011-2012 California Health Interview Survey, more than 5 million Californians, including both non-elderly adults and children, were uninsured between 2011 and 2012. Hispanics had the greatest proportion of uninsured at 21.8%, followed by Asian/Pacific Islanders (12.4%), African Americans (11.4%), and non-Hispanic whites (9.4%).

Discrimination is another factor that contributes to racial/ethnic disparities in cancer mortality. Racial and ethnic minorities tend to receive lower-quality health care than whites even when insurance status, age, severity of disease, and health status are comparable. Social inequalities, including communication barriers and provider assumptions, can affect interactions between patients and physicians and contribute to miscommunication and/or delivery of substandard care.

In addition to poverty and social discrimination, cancer occurrence in a population may also be influenced by cultural and/or inherited factors that decrease or increase risk. For example, Hispanic women have a lower risk of breast cancer, in part because they tend to begin having children at a younger age, which decreases breast cancer risk. Individuals who maintain a primarily plant-based diet or do not use tobacco because of cultural or religious beliefs have a lower risk of many cancers. Populations that include a large number of recent immigrants, such as Hispanics and Asians, have higher rates of cancers related to infectious agents (e.g., stomach, liver) because of higher prevalence of infection in immigrant countries of origin. Genetic factors may also explain some differences in cancer incidence. For example, women from population groups with a higher frequency of mutations in the breast cancer susceptibility genes BRCA1 and BRCA2, such as women of Ashkenazi Jewish descent, have an increased risk of breast and ovarian cancer. Genetic factors may also play a role in the elevated risk of prostate cancer among black men and the incidence of more aggressive forms of breast cancer in black women. However, genetic differences associated with race or ethnicity make only a minor contribution to the disparate cancer burden between populations.

Table 10. American Cancer Society Recommendations for the Early Detection of Cancer in Average-risk Asymptomatic People*

Cancer Site	Population	Test or Procedure	Recommendation
Breast	Women, ages 40-54	Mammography	Women should undergo regular screening mammography starting at age 45. Women ages 45 to 54 should be screened annually. Women should have the opportunity to begin annual screening between the ages of 40 and 44.
	Women, ages 55+		Transition to biennial screening, or have the opportunity to continue annual screening, continuing as long as overall health is good and life expectancy is 10+ years.
Cervix	Women, ages 21-29	Pap test	Screening should be done every 3 years with conventional or liquid-based Pap tests.
	Women, ages 30-65	Pap test & HPV DNA test	Screening should be done every 5 years with both the HPV test and the Pap test (preferred), or every 3 years with the Pap test alone (acceptable).
	Women, ages 66+	Pap test & HPV DNA test	Women ages 66+ who have had ≥ 3 consecutive negative Pap tests or ≥ 2 consecutive negative HPV and Pap tests within the past 10 years, with the most recent test occurring in the past 5 years should stop cervical cancer screening.
	Women who have had a total hysterectomy		Stop cervical cancer screening.
Colorectal[†]	Men and women, ages 50+	Guaiac-based fecal occult blood test (gFOBT) with at least 50% sensitivity or fecal immunochemical test (FIT) with at least 50% sensitivity, OR	Annual testing of spontaneously passed stool specimens. Single stool testing during a clinician office visit is not recommended, nor are “throw in the toilet bowl” tests. In comparison with guaiac-based tests for the detection of occult blood, immunochemical tests are more patient-friendly and are likely to be equal or better in sensitivity and specificity. There is no justification for repeating FOBT in response to an initial positive finding.
		Stool DNA test, OR	
		Flexible sigmoidoscopy (FSIG), OR	
		Double-contrast barium enema, OR	
		Colonoscopy, OR	
		CT Colonography	
Endometrial	Women at menopause		Women should be informed about symptoms of endometrial cancer and encouraged to report unexpected bleeding to a physician.
Lung	Current or former smokers ages 55-74 in good health with 30+ pack-year history	Low-dose helical CT (LDCT)	Clinicians with access to high-volume, high-quality lung cancer screening and treatment centers should initiate a discussion about annual lung cancer screening with apparently healthy patients ages 55-74 who have at least a 30 pack-year smoking history, and who currently smoke or have quit within the past 15 years. A process of informed and shared decision making with a clinician related to the potential benefits, limitations, and harms associated with screening for lung cancer with LDCT should occur before any decision is made to initiate lung cancer screening. Smoking cessation counseling remains a high priority for clinical attention in discussions with current smokers, who should be informed of their continuing risk of lung cancer. Screening should not be viewed as an alternative to smoking cessation
Prostate	Men, ages 50+	Prostate-specific antigen test with or without digital rectal examination	Men who have at least a 10-year life expectancy should have an opportunity to make an informed decision with their health care provider about whether to be screened for prostate cancer, after receiving information about the potential benefits, risks, and uncertainties associated with prostate cancer screening. Prostate cancer screening should not occur without an informed decision-making process.

CT-Computed tomography. *All individuals should become familiar with the potential benefits, limitations, and harms associated with cancer screening. †All positive tests (other than colonoscopy) should be followed up with colonoscopy.

For more information about the cancer burden in select racial/ethnic groups, please visit cancer.org/statistics for the American Cancer Society *Cancer Facts & Figures 2015* publication, as well as *Cancer Facts & Figures for African Americans 2013-2014* and *Cancer Facts & Figures for Hispanics/Latinos 2012-2014*.

Lesbian, Gay, Bisexual, and Transgender (LGBT) Differences in Cancer Risk

The lesbian, gay, bisexual, and transgender (LGBT) population is at greater risk of cancer due to a variety of unique social, economic, and structural factors. These include discrimination, stigma, and ostracism, all of which impact experiences with health care providers and overall health outcomes. These factors may cause some members of the LGBT community to not seek health care services in a timely manner. As a result, they may not undergo regular screening tests and may be diagnosed with cancer at a later stage, when the disease is more difficult to treat. While a compounding problem has been that LGBT individuals have been more likely to be uninsured, the passage of the

Affordable Care Act of 2010 and the overturning of the Defense of Marriage Act in 2013 are expected to improve access to care and coverage for them.

Following are a few examples of challenges affecting the LGBT community's cancer risk:

1. In a large, nationwide study, lesbians reported having fewer mammograms and pelvic exams than the heterosexual population.
2. Another study reported less frequent Pap tests among lesbians.
3. When compared with their straight counterparts, gay men and lesbian women are more likely to smoke, which puts them at a much higher risk of lung and other tobacco-related cancers. Partially due to the tobacco industry's relentless campaign to target gay men and lesbian women through bar promotions, sponsorships, and advertisements in the LGBT press, LGBT individuals have significantly higher smoking rates than heterosexual individuals (32.8% compared to 19.5%).

Selected Cancers

This section contains information on the California cancer burden for select cancers (breast, cervical, childhood, colorectal, lung, prostate, and skin).

Please see the American Cancer Society *Cancer Facts & Figures 2015* publication (cancer.org/statistics) for national statistics about these cancers, as well as additional information (risk factors, prevention, signs and symptoms, treatment).

Breast Cancer

Breast cancer is a malignant tumor that starts in the cells of the breast. The disease occurs primarily in women, but it can also occur in men. Breast cancer is the most common cancer among women in California, regardless of race/ethnicity.

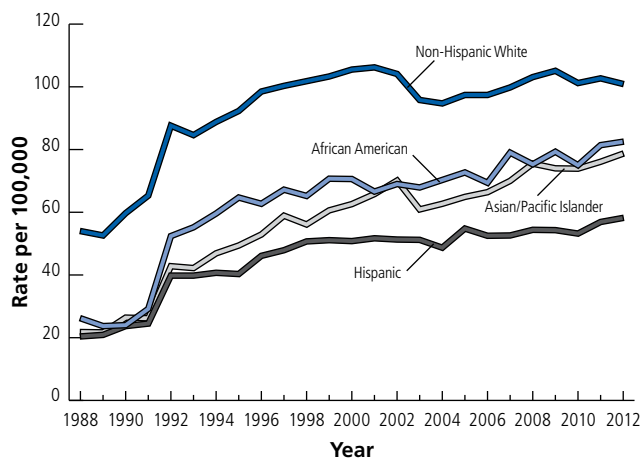
Breast cancer is classified differently based on the way that the cancer cells look under the microscope and whether the cells have spread into surrounding breast tissue. Please see the American Cancer Society *Cancer Facts & Figures 2015* publication (cancer.org/statistics) for a special section about breast carcinoma *in situ*.

New California cases: Breast cancer incidence in California has been fairly stable since 1988. There were 25,239 new cases diagnosed in 2012. More cancers are being diagnosed at an early stage, and the rate of late-stage disease has declined. About 71% of female breast cancers diagnosed in the state in 2012 were found at an early stage. This shift to earlier stage diagnoses reflects, in

part, the successful efforts of the American Cancer Society and other organizations, which together have increased the number of women who receive regular breast cancer screening.

Between 2007-2011, the invasive female breast cancer incidence rate in California as compared to the rest of the nation was 3% lower among Asian/Pacific Islanders, 4% higher among African

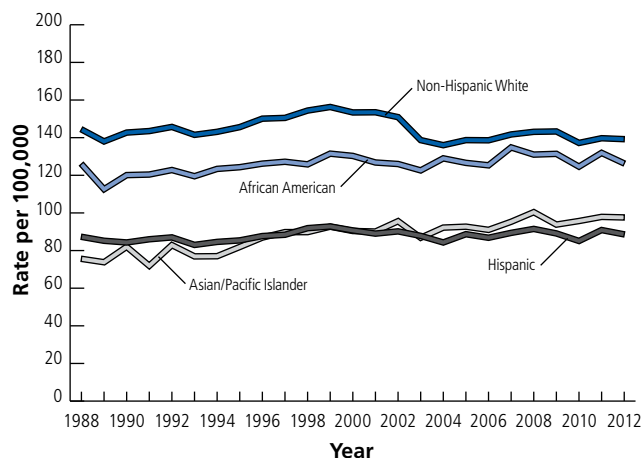
Figure 10. Trends in Early Stage Female Breast Cancer Incidence by Race/Ethnicity in California, 1988-2012



Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry.

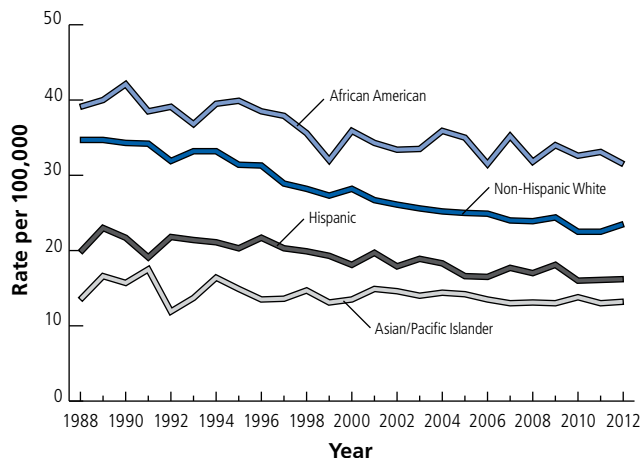
Figure 11. Trends in Female Breast Cancer Incidence by Race/Ethnicity in California, 1988-2012



Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Figure 12. Trends in Female Breast Cancer Mortality by Race/Ethnicity in California, 1988-2012



Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Americans, 9% lower among Hispanics, and 8% higher among non-Hispanic whites.

Deaths in California: A total of 4,493 breast cancer deaths occurred in California in 2012. Breast cancer mortality in the state has declined by 35% due to the combined effects of better treatment and earlier diagnosis. While this is very good news for California women, breast cancer incidence rates may begin to rise in the next decade as the large number of women born after World War II reach the age in which breast cancer becomes more common. This group of women may be at higher risk of breast cancer than their mothers due to younger age at first period or menstruation, smaller family size, delayed childbearing and other factors.

Roughly 140 men are diagnosed with breast cancer each year in California, and about 30 die of the disease annually. Breast cancer in men is clinically very similar to the disease in women, but the prognosis is often poorer because men tend to be diagnosed at a later stage.

Early detection: Early detection is the best defense against breast cancer (see Table 10, page 17). For women at average risk of breast cancer, recently updated American Cancer Society screening guidelines recommend that those 40 to 44 years of age have the choice for annual mammography; those 45 to 54 have annual mammography; and those 55 years of age and older have biennial, or can choose annual mammography, continuing as long as their overall health is good and life expectancy is 10 or more years. Women at increased risk (e.g., family history, genetic predisposition, past breast cancer) should talk with their doctors about the benefits and limitations of starting mammography screening earlier, having additional tests (e.g., breast ultrasound

and magnetic resonance imaging [MRI]) and/or having more frequent exams.

Mammography is a very accurate screening tool for women at both average and increased risk; however, like any medical test, it is not perfect. Mammography will detect most, but not all, breast cancers in women without symptoms, though the sensitivity is lower for younger women and women with dense breasts. For those women, digital mammography or ultrasound imaging in combination with standard mammography may increase the likelihood of detecting cancer. Mammography also results in some overdiagnosis, which is the detection of cancer that would neither have caused harm nor been diagnosed in the absence of screening. For most women at high risk of breast cancer, annual screening using MRI in addition to mammography is recommended, typically starting at the age of 30.

In 2013, 82% of women of screening age in California reported that they had a mammogram in the past year, compared to 68% in 1988. Non-Hispanic white women were most likely to have been recently screened in the past year (45%), while screening among Hispanic, non-Hispanic black, and Asian/Pacific Islander women were 21%, 6%, and 8%, respectively.

Survival: Overall, 63% of breast cancer diagnoses are localized disease (cancer has not spread to lymph nodes or other locations outside the breast), for which the five-year relative survival rate is 99%. If the cancer has spread to tissues or lymph nodes under the arm (regional stage), the survival rate is 86%. If the spread is to lymph nodes around the collarbone or to distant lymph nodes or organs (distant stage), the survival rate falls to 28%. In 2015, there will be an estimated 321,700 women and 1,600 men living in California who have had a history of invasive breast cancer.

Many studies have shown that being overweight adversely affects survival for postmenopausal women with breast cancer. In addition, breast cancer survivors who are more physically active, particularly after diagnosis, are less likely to die from breast cancer, or other causes, than those who are inactive.

Cervical Cancer

Cervical cancer is cancer that starts in the cervix, the lower part of the uterus (womb).

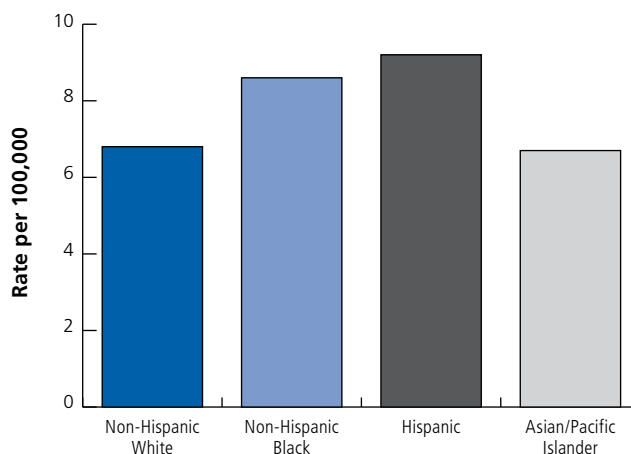
New California cases: A total of 1,461 new cases of cervical cancer were diagnosed in California in 2012. In general, the risk of developing cancer is much lower for persons of Hispanic and Asian/Pacific Islander origin than for non-Hispanic whites and African Americans. However, that is not true for cervical cancer. Hispanic women have the highest risk of developing cervical cancer, about 1½ times higher than non-Hispanic white and Asian/Pacific Islander women. Cervical cancer is one of the top 10 cancers diagnosed among many of the groups recently immigrating to California.

Deaths in California: A total of 422 deaths from cervical cancer occurred in California in 2012. Mortality rates have declined rapidly in the past two decades due to prevention and early detection as a result of screening with the Pap test, but have begun to level off in recent years. From 2008-2012, rates were stable among both women younger than 50, and among those 50 years and older.

Early detection: The Society recommends that all people with cervixes (e.g. women and transgender men) begin cervical cancer screening at 21 years of age. For women ages 21-29 years, screening should be a Pap test every three years. For women ages 30 to 65 years, screening should be a Pap test combined with a human papilloma virus (HPV) test every five years, or a Pap test every three years (see Table 10, page 17). Screening for cervical cancer is not only an opportunity for early detection, but it is also an opportunity for prevention. Pap tests can identify precancerous changes for removal before they become cancer. In California, 67% of women reported having a Pap test within the past two years. Non-Hispanic white women were most likely to have had a Pap test within the past two years (29%), followed by Hispanic (25%), Asian and Pacific Islander (8%), and non-Hispanic black (4%) women in 2013.

Another important topic in cervical cancer prevention is HPV. Infection with HPV is the number one risk factor for cervical cancer. In fact, almost all – more than 99% – cervical cancers are related to HPV. Of the more than 150 related HPV types, about 70% are caused by HPV types 16 or 18. While nearly all cervical cancers are related to HPV, most genital HPV infections do not cause cervical cancer. The American Cancer Society also recommends routine HPV vaccination for females ages 11-12 years, and HPV vaccination for females ages 13-18 years to catch up on

Figure 13. Invasive Cervical Cancer Incidence by Race/Ethnicity, 2012



Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry

missed vaccines or to complete the series. Women ages 19-26 years should talk to their doctor or nurse about whether to get the vaccine based on their risk of previous HPV exposure and potential benefit from the vaccine.

Survival: If abnormal findings are detected early through a Pap test and treated, survival is virtually 100%. As with all other cancers, the five-year survival rate of cervical cancer depends largely on the stage in which the disease is detected and treated. If detected in the early stages (*in situ* or stage 1), cervical cancer can have a survival rate as high as 93% (localized), decreasing to 60% (regional). Cervical cancers detected at distant stage have an approximate 19% five-year survival rate. With what is known about cervical cancer prevention, early detection, and treatment, cervical cancer deaths can be reduced to virtually zero if prevention and early detection guidelines are followed.

Childhood Cancer (Ages 0-14 years)

Major categories of pediatric cancer include leukemia (31% of all childhood cancers, including benign brain tumors), brain and other central nervous system tumors (25%), neuroblastoma (6%), Wilms tumor (5%), non-Hodgkin lymphoma (4%), Hodgkin lymphoma (4%), rhabdomyosarcoma (3%), osteosarcoma (3%), retinoblastoma (2%), and Ewing sarcoma (1%).

New California cases: More than 1,700 children and young adults under the age of 20 are diagnosed with cancer in California each year. Of those, more than 1,000 are between 0-14 years. When compared to the rest of the nation, the cancer incidence rate among children 0-14 years in California between 2007-2011 was 1% higher among non-Hispanic whites, 7% higher among African Americans, 10% higher among Hispanics, and 9% higher among Asian/Pacific Islanders.

Table 11. Number of Children Diagnosed with Cancer by Age at Diagnosis and Race/Ethnicity in California, 2012

Race/Ethnicity	0-4 Years	5-9 years	10-14 years	Total
Non-Hispanic White	198	93	86	377
African American	31	18	24	73
Hispanic	259	143	175	577
Asian/Pacific Islander	61	26	26	113

Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry

Table 12. Cancer Incidence among Children Ages 0-14 by Race/Ethnicity in California, 2012

Race/Ethnicity	Cases	Rate
Non-Hispanic White	377	17.2
Non-Hispanic Black	73	15.1
Hispanic	577	14.3
Asian/Pacific Islander	113	12.2

Note: Rates are per 100,000 and age-adjusted to the 2000 US Std Population.

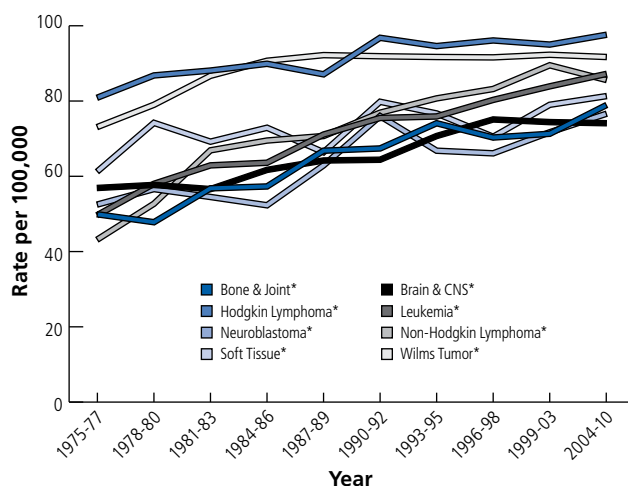
Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry

Deaths in California: Although accidents kill about three times more children than cancer, an estimated 1 of every 265 children will develop some form of cancer before they are 20 years old. Mortality rates for childhood cancer in California have declined by 66% over the past four decades, from 7.3 (per 100,000) in 1970 to 2.3 in 2012. The substantial progress in reducing childhood cancer mortality is largely attributable to improvements in treatment and high rates of participation in clinical trials.

Survival: Survival for all invasive childhood cancers combined has improved markedly over the past 30 years due to new and improved treatments. Nationwide, the five-year relative survival rate increased from 58% for diagnoses in the mid-1970s to 83% in the most recent time period (2004-2010). In California, the five-year relative survival for children and adolescents diagnosed between 2003 and 2012 for all cancers combined (excluding benign brain/central nervous system tumors) was 81.5 percent. However, rates vary considerably depending on cancer type, patient age, and other characteristics. For the most recent time period (2004-2010), the five-year survival among children 0-14 years with Hodgkin lymphoma was 98%; Wilms tumor, 92%; non-Hodgkin lymphoma, 86%; leukemia, 87%; neuroblastoma, 77%; brain and other central nervous system tumors, 74%; soft tissue, 81%; and bone and joint, 79%.

Pediatric cancer patients may experience treatment-related side effects long after active treatment. Late treatment effects include

Figure 14. Trends in Five-year Relative Survival among Children Ages 0-14 by Year of Diagnosis, 1975-2010



Note: Based on follow-up through 2011. Neuroblastoma and Wilms tumor are not mutually exclusive from the other tumors presented in the graph. * The difference between 1975-1977 and 2004-2010 is statistically significant (<0.05).

Source: SEER Cancer Statistics Review, 1975-2010. National Cancer Institute, 2014. Prepared by the California Department of Public Health, California Cancer Registry.

impairment in the function of specific organs, secondary cancers, and cognitive deficits. The Children's Oncology Group (COG) has developed long-term follow-up guidelines for screening and management of late effects in survivors of childhood cancer. Visit the COG website at survivorshipguidelines.org for more information on childhood cancer management.

See the Special Section: Childhood & Adolescent Cancers in the American Cancer Society *Cancer Facts & Figures 2014* publication at cancer.org/statistics for additional information.

Colorectal Cancer

Colorectal cancer is cancer of the colon or rectum. It is the second-leading cause of cancer death when men and women are combined. Screening offers an opportunity not only for the early detection of colorectal cancer, but also for preventing the disease.

New California cases: In 2012, there were 9,788 cases of colon cancer and 4,326 cases of rectal cancer diagnosed in California. Colorectal cancer risk has declined steadily in the state over the past 25 years, largely attributed to screening. Incidence rates declined substantially for all four major racial/ethnic groups since 1988. Incidence rates of colorectal cancer decreased 39% among non-Hispanic whites, 34% among African Americans, 27% among Asian/Pacific Islanders, and 11% among Hispanics.

In 2007-2011, the invasive colorectal cancer incidence rate in California, as compared to the rest of the nation, was 3% higher among Asian/Pacific Islanders, 1% higher among African Americans, 10% lower among Hispanics, and 4% lower among non-Hispanic whites.

American Cancer Society recommendations for colorectal cancer early detection

People at average risk

The American Cancer Society believes that preventing colorectal cancer (and not just finding it early) should be a major reason for being tested. Finding and removing polyps keeps some people from getting colorectal cancer. Tests that have the best chance of finding both polyps and cancer are preferred if these tests are available and the person is willing to have them.

Beginning at age 50, both men and women at average risk for developing colorectal cancer should use one of the screening tests below:

Tests that find polyps and cancer

- Flexible sigmoidoscopy every five years*
- Colonoscopy every 10 years
- Double-contrast barium enema every five years*
- CT colonography (virtual colonoscopy) every five years*

Tests that mainly find cancer

- Guaiac-based fecal occult blood test (gFOBT) every year*,**
- Fecal immunochemical test (FIT) every year*,**
- Stool DNA test (sDNA) every three years*

*Colonoscopy should be done if test results are positive.

** Highly-sensitive versions of these tests should be used with the take-home multiple sample method. An FOBT or FIT done during a digital rectal exam in the doctor's office is not adequate for screening.

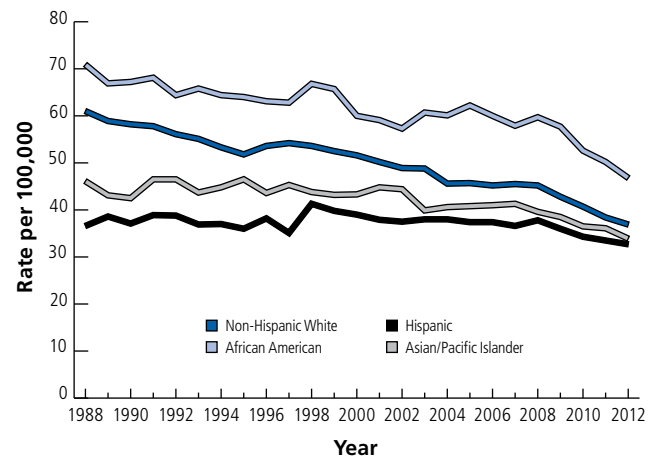
People at increased or high risk

If there is an increased or high risk of colorectal cancer, begin screening before age 50 and/or be screened more often. The following conditions make the risk higher than average:

- A personal history of colorectal cancer or adenomatous polyps
- A personal history of inflammatory bowel disease (ulcerative colitis or Crohn's disease)
- A strong family history of colorectal cancer or polyps
- A known family history of a hereditary colorectal cancer syndrome such as familial adenomatous polyposis (FAP) or hereditary non-polyposis colon cancer (HNPCC)

The risk of colorectal cancer increases with age. In 2012, 90% of cases were diagnosed in individuals 50 years of age and older. Modifiable factors associated with increased risk include obesity, physical inactivity, a diet high in red or processed meat, alcohol consumption, long-term smoking, and possibly very low intake of fruits and vegetables. Hereditary and medical factors that increase risk include a personal or family history of colo-

Figure 15. Trends in Invasive Colon and Rectum Cancer Incidence by Race/Ethnicity in California, 1988-2012



Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry.

rectal cancer and/or polyps, a personal history of chronic inflammatory bowel disease (ulcerative colitis, Crohn's disease), certain inherited genetic conditions (e.g., Lynch syndrome, also known as hereditary non-polyposis colorectal cancer, and familial adenomatous polyposis [FAP]), and type 2 diabetes.

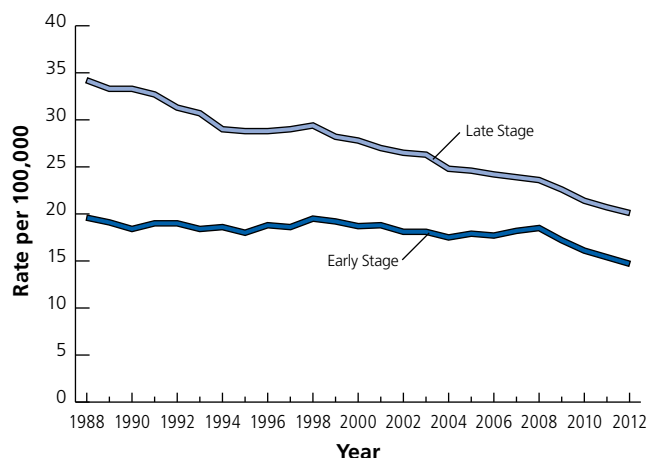
Deaths in California: A total of 4,122 deaths from colon cancer and 1,067 deaths from rectal cancer occurred in California in 2012. Over the past 25 years, mortality rates decreased by 40% for all races combined. This trend reflects declining incidence rates and improvements in early detection and treatment.

Early detection: Beginning at the age of 50, men and women who are at average risk for developing colorectal cancer should begin screening. Screening can detect and allow for the removal of colorectal polyps that might become cancerous, as well as detect cancer at an early stage, when treatment is usually less extensive and more successful. There are a number of recommended screening options, which differ by the extent of bowel preparation, as well as test performance, limitations, time interval, and cost.

In 2013, only 49% of California adults ages 50 and older reported having had sigmoidoscopy or colonoscopy within the past five years. The proportion screened was even lower among persons in poverty (10% male, 12% female) and among Hispanics (15% male and 18% female).

In 2013, 34% of Californians older than age 50 reported having a fecal occult blood test (FOBT) using a home kit in the past five years. Individuals with low incomes and Hispanics were less likely to have had the exam (26% and 25%, respectively).

Figure 16. Trends in Colon and Rectum Cancer Incidence by Stage at Diagnosis in California, 1988-2012



Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

Survival: The five-year relative survival rate for Californians with colorectal cancer is 67%. However, when colorectal cancers are detected at an early, localized stage, the five-year survival is 92%. Unfortunately, only 42% of colorectal cancers are diagnosed at an early stage, in part due to the underuse of screening. If the cancer has spread regionally to involve nearby organs or lymph nodes at the time of diagnosis, the five-year survival drops to 71%. If the disease has spread to distant organs, the five-year survival is 13%. The American Cancer Society recommends that both men and women begin routine screening for colorectal cancer at age 50.

Visit cancer.org/statistics to see the American Cancer Society *Colorectal Cancer Facts & Figures 2014-2016* publication.

Lung Cancer

New California cases: In 2012, 16,596 new cases of lung cancer were diagnosed, accounting for about 11% of all cancer diagnoses in California. The incidence rate has been declining since the mid-1980s in men, but only since the mid-2000s in women. From 1988 to 2012, lung cancer incidence rates decreased by 2.5% per year in men and by 1.0% per year in women.

Deaths in California: Lung cancer accounts for more deaths than any other cancer in both men and women. A total of 12,463 deaths, accounting for about 22% of all cancer deaths, occurred in California in 2012. From 1988 to 2012, rates decreased 2.7% per year in men and 1.3% per year in women. Gender differences in lung cancer mortality reflect historical differences in patterns of smoking uptake and cessation over the past 50 years.

Early detection: In 2010, results from the National Lung Screening Trial showed 20% fewer lung cancer deaths among current and former heavy smokers who were screened with spiral CT compared to standard chest x-ray. In January 2013, the American Cancer Society issued guidelines for the early detection of lung cancer based on a systematic review of the evidence. These guidelines endorse a process of shared decision making between clinicians who have access to high-volume, high-quality lung cancer screening programs and current or former adult smokers (who quit within the previous 15 years) who are 55 to 74 years of age, in good health, and with at least a 30-year pack history of smoking. Shared decision making should include a discussion of the benefits, uncertainties, and harms associated with lung cancer screening. In December 2013, the US Preventive Services Task Force issued similar guidelines. For more information on lung cancer screening, see Table 10 on page 17.

Survival: The national one- and five-year relative survival rates for lung cancer are 44% and 17%, respectively. Only 15% of lung cancers are diagnosed at a localized stage, for which the five-year survival rate is 54%. More than half (57%) are diagnosed at a distant stage, for which the one- and five-year survival is 26% and 4%, respectively. The five-year survival for small cell lung cancer (6%) is lower than that for non-small cell (21%).

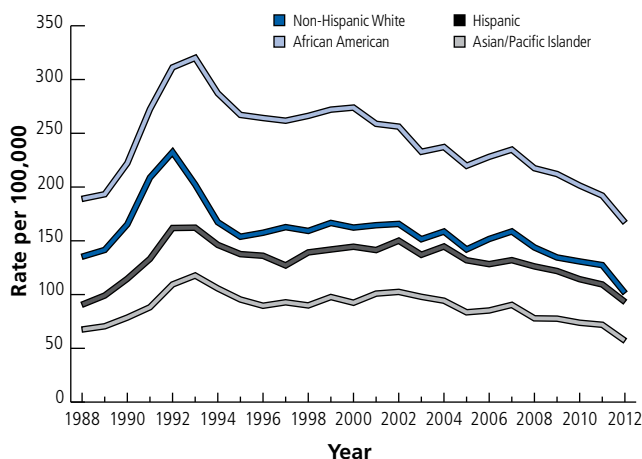
Prostate Cancer

New California cases: In 2012, there were 19,164 new cases of prostate cancer diagnosed in California. It is the most frequently diagnosed cancer in men in almost all racial/ethnic groups in California, aside from skin cancer. The number of prostate cancers diagnosed each year rose dramatically in the early 1990s when the prostate-specific antigen (PSA) test began to be widely used to detect this cancer. Incidence rates peaked in 1992-93 and were approximately 20% lower in 2012 than in 1988. These trends are consistent with the rapid introduction of a new, sensitive screening method.

The only well-established risk factors for prostate cancer are increasing age, African ancestry, a family history of the disease, and certain inherited genetic conditions. About 60% of all prostate cancer cases are diagnosed in men 65 years of age and older, and 97% occur in men 50 and older. As previously stated, African American men are at especially high risk for prostate cancer. They are approximately 45% more likely to develop this disease than non-Hispanic white men, 58% more likely than Hispanic men, and 94% more likely than Asian/Pacific Islanders.

In 2007-2011, the prostate cancer incidence rate in California, as compared to the rest of the nation, was 13% lower among Asian/Pacific Islanders, 12% lower among African Americans, 7% lower among Hispanics, and 5% lower among non-Hispanic white men.

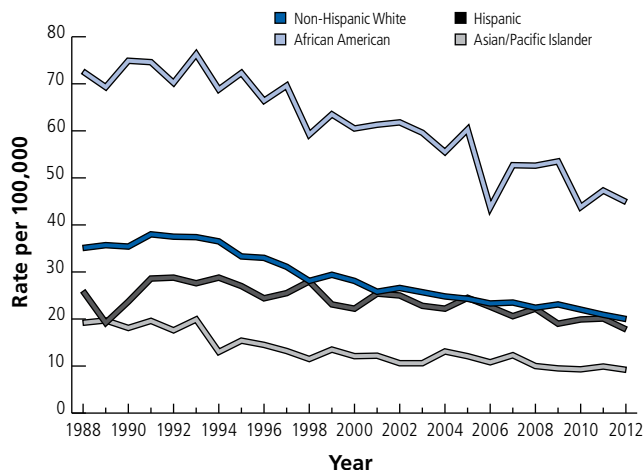
Figure 17. Trends in Prostate Cancer Incidence by Race/Ethnicity in California, 1988-2012



Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry.

Figure 18. Trends in Prostate Cancer Mortality by Race/Ethnicity in California, 1988-2012



Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry.

Deaths in California: With a total of 2,972 deaths in 2012 in California, prostate cancer is the second-leading cause of cancer death in men. Prostate cancer death rates have been decreasing since the early 1990s in men of all races/ethnicities, though they remain more than twice as high in African Americans as in any other group. Overall, prostate cancer death rates decreased by 2.7% per year from 1988 to 2012. Prostate cancer mortality in California decreased by 42% after 1988, with declines among men in each racial/ethnic group.

Early detection: Results from two large clinical trials designed to determine the efficacy of screening using PSA testing for the reduction of prostate cancer death were inconsistent. Given the significant potential for serious side effects associated with prostate cancer treatment, along with concerns about frequent overdiagnosis (the detection of slow-growing cancers that would never have caused harm), no organizations presently endorse routine prostate cancer screening for men at average risk.

The American Cancer Society recommends that beginning at age 50, men who are at average risk of prostate cancer and have a life expectancy of at least 10 years have a conversation with their health care provider about the benefits and limitations of PSA testing. Men should have an opportunity to make an informed decision about whether to be tested based on their personal values and preferences. Men at high risk of developing prostate cancer (black men or those with a close relative diagnosed with prostate cancer before the age of 65) should have this discussion with their health care provider beginning at 45. Men at even higher risk (because they have several close relatives diagnosed with prostate cancer at an early age) should have this discussion with their provider at age 40.

In 2012, 66% of California men ages 50 and older reported having had at least one PSA test. White men (27%) were more likely than black and Hispanic men to have been tested in the past year (3% and 7%, respectively). Men from households above the poverty level were more likely to have had a prostate cancer screening test than men from households below the poverty level.

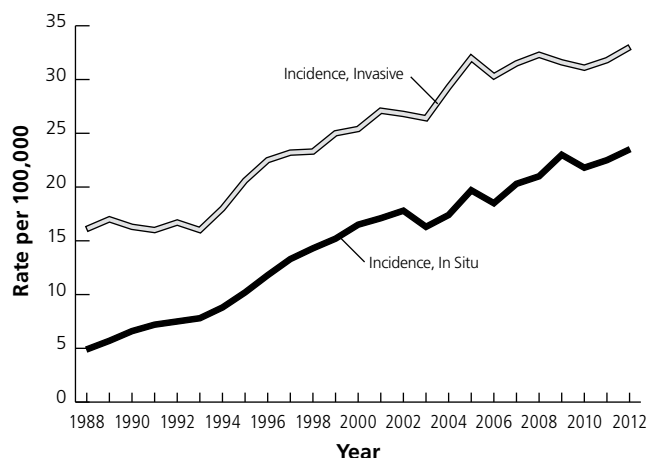
Survival: The majority (93%) of prostate cancers are discovered in the local or regional stages, for which the five-year relative survival rate approaches 100%. Over the past 25 years, the five-year relative survival rate for all stages combined has increased from 68% to almost 100%. Obesity and smoking are associated with an increased risk of dying from prostate cancer.

Skin Cancer

New California cases: Skin cancer is the most commonly diagnosed cancer in the US. However, the actual number of the most common types – basal cell and squamous cell skin cancer, more commonly referred to as nonmelanoma skin cancer (NMSC) – is very difficult to estimate because these cases are not required to be reported to cancer registries. Nonmelanoma skin cancer is usually highly curable.

A total of 8,134 new cases of melanoma cancer were diagnosed in California in 2012. Melanoma is rare among African Americans; the lifetime risk of developing the disease is 0.1%, compared to 2.4% among whites. Incidence rates are higher in women than in men before the age of 45, but by the age of 60, rates in men are more than double those in women and by the age of 80 they are almost triple.

Figure 19. Trends in Melanoma Incidence among Non-Hispanic Whites in California, 1988-2012



Note: Rates are age-adjusted to the 2000 US population.

Source: California Cancer Registry, California Department of Public Health.
Prepared by the California Department of Public Health, California Cancer Registry.

In California, incidence rates of *in situ* melanoma of the skin have increased in the past 24 years for all racial/ethnic groups, a statistically significant increase for Hispanics and non-Hispanic whites. Incidence rates of invasive melanoma of the skin have also increased for non-Hispanic whites and Hispanics, and remained relatively stable for African Americans and Asian/Pacific Islanders.

Deaths in California: Melanoma accounts for less than 2% of all skin cancer cases, but the vast majority of skin cancer deaths. A total of 959 deaths from melanoma and 363 deaths from other types of skin cancer (does not include NMSC) occurred in California in 2012. In California, between 2008 and 2012, mortality rates of melanoma among individuals younger than 50 decreased by 7.5% per year, while rates also decreased by 0.5% per year among those 50 and older.

Early detection: Risk factors vary for different types of skin cancer. For melanoma, major risk factors include a personal or family history of melanoma and the presence of atypical, large, or numerous (more than 50) moles. Other risk factors for all types of skin cancer include sun sensitivity (e.g., sunburning easily, difficulty tanning, or natural blond or red hair color); a history of excessive sun exposure, including sunburns; use of tanning booths; diseases or treatments that suppress the immune system; and a past history of skin cancer.

The best way to detect skin cancer early is to recognize new or changing skin growths, particularly those that look different from other moles. All major areas of the skin should be examined regularly, and any new or unusual lesions, or a progressive



change in a lesion's appearance (size, shape, or color, etc.), should be evaluated promptly by a physician. Melanomas often start as a small, mole-like growth that increases in size and may change color. A simple ABCD rule outlines warning signs of the most common type of melanoma: A is for asymmetry (one half of the mole does not match the other half); B is for border irregularity (the edges are ragged, notched, or blurred); C is for color (the pigmentation is not uniform, with variable degrees of tan, brown, or black); D is for diameter greater than 6 millimeters (about the size of a pencil eraser).

Survival: Almost all cases of basal cell and squamous cell skin cancer can be cured, especially if the cancer is detected and treated early. Although melanoma is also highly curable when detected in its earliest stages, it is more likely than NMSCs to spread to other parts of the body. The 5- and 10-year relative survival rates for people with melanoma are 91% and 89%, respectively. For localized melanoma (84% of cases), the five-year survival rate is 98%; survival declines to 63% and 16% for regional and distant stage disease, respectively.

American Cancer Society California Division

Our Commitment

In 2015, an estimated 172,090 Californians will be diagnosed with cancer. A cancer diagnosis brings major changes to cancer patients and their loved ones, and the American Cancer Society provides help at every point, from linking new patients with survivors, to providing valuable information about the latest clinical trials, to providing transportation for patients to and from medical appointments. The Society is committed to providing comprehensive support 24 hours a day, seven days a week.

Financial Support

The generosity of our donors enables us to fight cancer on many fronts. Donations help fund research, education, advocacy, and patient services. Beginning in calendar year 2014, 26 grants totaling \$8,764,500 were awarded to California researchers. Without the support of individual and corporate donors, the American Cancer Society could not accomplish its mission of eliminating cancer as a major health problem and helping to improve the quality of life of cancer patients and their families.

Volunteer Engagement

American Cancer Society volunteers are dedicated to finishing the fight against cancer. Our volunteers are passionate about saving more lives from the disease, and they help raise vital funds, provide office support, and help patients and caregivers through their cancer experience. They come from all walks of life and represent nearly every occupation, age, and ethnic group.

In California, volunteers are essential to the success of our local Society programs, services, and events. They provide free rides to cancer patients to and from treatments; they help women in active cancer treatment manage the appearance-related side effects of treatment; they offer understanding, support, and hope to those facing breast cancer; and they help organize and participate in the many fundraising events that the Society holds each year. People just like you are helping the American Cancer Society finish the fight. Visit cancer.org/volunteer or call 1-800-227-2345 to learn more about how you can help finish the fight against cancer.

Communities

Toward our goal of increasing awareness and capacity to deliver American Cancer Society information, patient services, and resources within diverse and underserved communities, we have renewed our focus on core patient programs and supporting our strong cadre of volunteers.

In 2014, the American Cancer Society, Inc., California Division reached 37,113 individuals with patient-related information and services, including 18,407 patients diagnosed within the past year.

- 23,152 callers received free patient-related information and support from American Cancer Society cancer information specialists staffing the 24/7 toll-free information line.
- 3,032 cancer patients in California received transportation assistance from the Society for a total of more than 58,292 one-way trips.
- 577 cancer patients received help with lodging for a total of 4,531 nights.
- 426 breast cancer patients were visited by a Reach To Recovery® volunteer, our one-on-one volunteer support program for women with breast cancer.
- 3,883 patients attended Look Good Feel Better® sessions to learn how to deal with appearance-related side effects of treatment.
- 9,679 patients in California received a Personal Health Manager information and organizer toolkit.
- 4,881 patients received wigs or other head covering to help deal with appearance-related side effects of cancer treatment.

Partnering with Health Systems

At the American Cancer Society, we believe that success in the fight against cancer is a team effort. Our Primary Care, Hospital, and State Health Systems teams are engaging critical partners to maximize our impact in serving California's diverse communities.

Primary Care Systems

During 2014, the California Division identified over 200 Primary Care Systems, which included Federally Qualified Health Centers (FQHCs), Indian Health Centers, and Community Health Centers to implement evidence-based client and provider-oriented intervention strategies to increase cancer screening rates in medically underserved communities. The Primary Care Systems team has partnered with 62 Clinic Systems throughout California to implement evidence-based interventions around breast, cervical, and colorectal cancer screening. In addition, the Community Health Advocates implementing Nationwide Grants for Empowerment and Equity (CHANGE) Grant Program awarded the California Division \$720,000 to work with 13 Clinic Systems. Those funds allowed the Primary Care Systems team to successfully manage and support 14 CHANGE Grants.

Hospital Systems

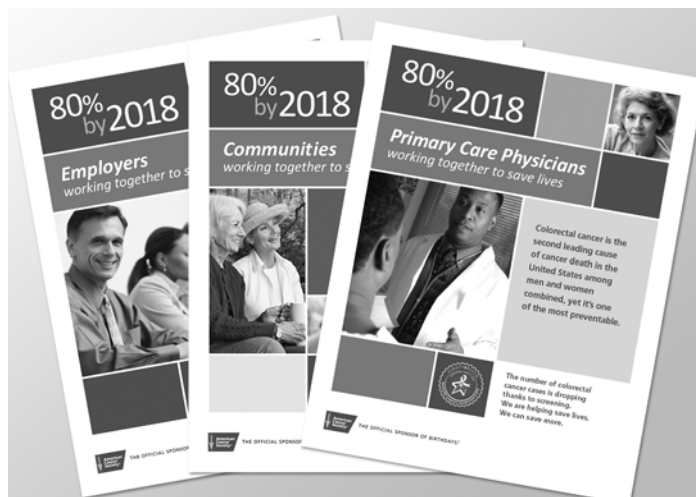
The Society's hospital initiatives are focused on working directly with nearly 200 hospital systems with special focus on National Cancer Institute Comprehensive Cancer Centers, Commission on Cancer (CoC) accredited hospitals, Kaiser Permanente, and other hospitals that serve large numbers of cancer patients. The goal of these partnerships is to prevent cancer and to provide the best quality of care and support to those affected by this disease. In 2014 those partnerships enabled the Society to provide free support programs to cancer patients and their families, participate in community-based survivorship activities, support hospitals in meeting Quality Care Standards set by the CoC, and partner on community outreach activities focused on cancer prevention and early detection.

State Health Systems

The State Health Systems team partners with health systems that have a state-wide presence and can influence the general public's cancer screening and healthy living activities. This team works with health insurers (commercial, Medi-Cal, Medicare), quality improvement organizations, public health departments, and state programs such as the Breast and Cervical Cancer Early Detection Program. The goal of these partnerships is to collaborate on initiatives related to cancer prevention, early detection, and improving the quality of life of individuals with cancer. In 2014, the State Health Systems team partnered with health plans to reach members with potentially lifesaving cancer screening messages and to reach providers with Society information and resources for their practice.

80% by 2018 Colorectal Cancer Screening Initiative

Throughout its history, the Society has implemented a number of aggressive awareness campaigns targeting the public and health care professionals. Campaigns to increase usage of Pap testing and mammography have contributed to a 70% decrease



Visit www.nccrt.org for 80% by 2018 colorectal cancer screening resources.

in cervical cancer death rates since the 1950s and a 35% decline in breast cancer death rates since 1989.

Recognizing colorectal cancer as a major public health problem, the American Cancer Society and the Centers for Disease Control and Prevention established the National Colorectal Cancer Roundtable in 1997. In 2013, the Roundtable launched the 80% by 2018 initiative through which hundreds of organizations are working toward the goal of 80% of adults ages 50 and older being regularly screened for colorectal cancer by 2018. The Society and the CDC are rallying organizations to embrace this shared goal.

The Society's California Division is committed to increasing screening and saving lives from colorectal cancer by working to increase access to screening in underserved communities, increasing utilization of screening among individuals who do have access, providing information and support to those facing a colorectal cancer diagnosis, conducting research to help save lives from the disease, and advocating for increased access to quality colorectal cancer screening and treatment for all Americans.

American Cancer Society Research Program

The American Cancer Society is the largest nongovernmental, not-for-profit investor in cancer research in the US. Since our research program began in 1946, the Society has devoted more than \$4 billion to cancer research. As the nation's largest private source of funds for scientists studying cancer, the Society focuses its funding on investigator-initiated, peer-reviewed proposals. This process ensures that scientists propose projects that they believe are ready to be tackled with available knowledge and techniques, rather than working on projects designed by admin-

istrators who are removed from the front lines of research. This intellectual freedom encourages discovery in areas where scientists believe we are most likely to make the most progress.

Nobel Prize Winners

The success of the Society's research program is exemplified by the fact that 47 Society-funded researchers have been recognized with the Nobel Prize.

Table 13. Summary of Research Grants and Fellowships: In Effect During Fiscal Year Ending December 31, 2014

Institution	# Grants	Total
Beckman Research Institute of City of Hope	5	\$5,633,000
California Institute of Technology	2	\$870,000
Cedars-Sinai Medical Center	3	\$1,965,000
Children's Hospital of Los Angeles	2	\$1,470,000
Leland Stanford Junior University	1	\$720,000
Salk Institute for Biological Studies	6	\$900,000
San Diego State University	1	\$102,000
Sanford-Burnham Institute for Medical Research	1	\$720,000
Stanford University	12	\$4,017,166
The Regents of the University of California, San Francisco	19	\$6,898,500
The Scripps Research Institute	3	\$472,166
University of California, Berkeley	3	\$1,283,500
University of California, Davis	5	\$2,038,000
University of California, Davis Medical Center	1	\$890,000
University of California, Irvine	7	\$4,074,000
University of California, Los Angeles	9	\$5,300,500
University of California, San Diego	10	\$5,078,000
University of California, San Diego Medical Center	1	\$720,000
University of California, Santa Cruz	2	\$1,440,000
University of Southern California	9	\$7,109,000
California Total	102	\$51,700,832

Note: These awards represent multiple-year funding for grants that may be carried over several years.



American Cancer Society Cancer Action Network

What is ACS CAN?

The American Cancer Society Cancer Action Network (ACS CAN) is the nonpartisan, nonprofit advocacy affiliate of the American Cancer Society. ACS CAN is the nation's leading advocate for public policies that are helping to defeat cancer. The organization ensures that cancer patients, survivors, and their families have a voice in public policy matters at all levels of government. ACS CAN works to encourage elected officials and candidates to make cancer a top national priority.

Why ACS CAN?

Defeating cancer is as much a matter of public policy as scientific discovery. Lawmakers play a critical role in determining how much progress our country makes toward defeating cancer.

ACS CAN's work has resulted in enormous progress through increased funding for cancer research and prevention programs, stronger tobacco control policies nationwide, and improved access to the full range of cancer care for people diagnosed with the disease and their families.

Advocacy successes in California (from both the American Cancer Society and ACS CAN) include the establishment of the California Cancer Registry, as well as the state Breast and Cervical Cancer Early Detection and Treatment Program and state Breast Cancer Research Program. Over the 40-plus years of legislative advocacy in the state, groundbreaking legislation on smoke-free indoor and outdoor public places, school nutrition standards, restaurant menu labeling, indoor tanning, and health care coverage, was often won in California first.

What does ACS CAN do?

ACS CAN follows the science when supporting evidence-based policy and legislative solutions designed to eliminate cancer as a major health problem. The organization utilizes its expert lobbying, policy, grassroots, and media advocacy capacity to amplify the voices of patients in support of laws and policies that save lives from cancer. And through Cancer Votes, ACS CAN's voter education program, the organization is working to make sure candidates for public office are aware of the impact cancer has on the people they represent and why they should make the fight against the disease a priority once they're in office.

What does ACS CAN not do?

ACS CAN does not endorse candidates of political parties, and it is not a political action committee (PAC). The organization does educate voters by serving as a trusted source of information about candidate positions on cancer-related concerns and on key issue campaigns across the country that impact those affected by cancer. Like cancer itself, ACS CAN is nonpartisan.

Who is ACS CAN?

At the heart of ACS CAN's grassroots advocacy movement is a cadre of volunteer Legislative Ambassadors who have taken on leadership roles to advocate for cancer patients and their families at the local, state, and federal levels of government. In California, there are nearly 600 Legislative Ambassadors who are the voices in their communities to influence lawmakers on important cancer-related legislation and policy. They recruit new Legislative Ambassadors, generate support for federal and state legislative priorities, and advocate for local ordinances and initiatives on smoke-free public places and multi-unit housing, tobacco retail licensing, and school nutrition and physical activity policies.

During 2014, Legislative Ambassadors advocated for increased federal funding for cancer research, quality of life/palliative care, and Medicare colorectal cancer screening bills, asking congressional members to co-sponsor legislation that would help cancer patients. In 2015, Legislative Ambassadors will continue to increase the number of congressional co-sponsorships in an effort to pass new federal laws.

Legislative Ambassadors fuel the community-based grassroots movement that gives ordinary people extraordinary power to fight cancer in the legislative arena. Legislative Ambassadors are kept informed of legislative activities in Sacramento, Washington DC, and in their local communities. They are also briefed on the progress of cancer-related legislation, and are notified when grassroots action is needed and legislators need to be contacted.

Visit acscan.org/California for more information on ACS CAN, becoming a Legislative Ambassador, or updated information on ACS CAN's local, state, and federal legislative efforts.

What are the 2015 public policy priorities?

Tobacco Control

ACS CAN is working at the federal, state, and local levels to promote policies that reduce tobacco use, the largest preventable cause of disease and premature death in the US. At the federal level, ACS CAN is supporting inclusion of anti-tobacco provisions in the proposed Trans-Pacific Trade Partnership to curb the tobacco industry's ongoing efforts to overturn effective tobacco control policies worldwide. In California, ACS CAN is working to revive the American Cancer Society's decades-old legacy of tobacco control leadership. ACS CAN is a key member of the Save Lives California tobacco tax campaign and is also pursuing increased funding for state tobacco control programs, expansion of smoke-free policies, and improved access to effective smoking cessation. ACS CAN is also urging the FDA to regulate e-cigarettes, all cigars, and other products not currently under its jurisdiction.

Cancer Research

Cancer research funded by the federal government is critical to finding cures. At the federal level, ACS CAN fights each year to increase funding for cancer research through the National Institutes of Health and the National Cancer Institute. In California, ACS CAN monitors state appropriations processes in order to preserve and protect funding for state tobacco and breast cancer research programs and the California Cancer Registry, the cornerstone of cancer research in the state.

Access to Care and the Affordable Care Act

Individuals without health insurance are more likely to be diagnosed with cancer at a later stage and more likely to die from the disease. ACS CAN believes all Americans should have access to affordable, quality health care coverage. At the federal level, ACS CAN is focusing on strengthening and protecting the coverage, affordability, prevention, and quality of care provisions of the Affordable Care Act, notably by improving access to drug coverage and network adequacy.

In California, as of May 2014, more than 3.5 million had new coverage because of Affordable Care Act options. California was among the first states to expand Medi-Cal coverage, establish a state health insurance exchange, and ban coverage denials for children with pre-existing conditions. In 2014, ACS CAN sponsored and passed legislation to provide cancer patients with information about which drugs are included on health plan drug formularies. This new transparency provision will enable patients to determine which health plans cover the potentially lifesaving drugs they need. Throughout 2015, ACS CAN will

continue to work to ensure that the Affordable Care Act's patient protections are strongly implemented and made accessible through provisions designed to improve health care quality and delivery.

Early Detection and Screening

Programs that increase access to proven cancer screenings, especially among medically underserved populations, help save lives and are good for the economy. ACS CAN supports substantial funding increases for cancer control at the CDC, including the National Breast and Cervical Cancer Early Detection Program, and the National Colorectal Cancer Control Program. In California, ACS CAN supports the Every Woman Counts program, which provides free breast and cervical cancer screening for uninsured and underinsured women. For those diagnosed with breast or cervical cancer, free treatment is available from the Breast and Cervical Cancer Treatment Program, which provides care through the Medi-Cal program. In pursuit of the Society's goal of collaborating with the National Colorectal Cancer Roundtable and numerous other organizations to increase colorectal cancer screening rates to 80% among all adults age 50 and older by 2018, ACS CAN works with the state's California Colon Cancer Control Program (C4P). C4P was established with a CDC grant to increase colorectal cancer screening by conducting outreach and education for communities and medical providers and collaborating with nonprofit groups, health insurers, and other stakeholders.

Obesity, Nutrition, and Physical Activity

Up to 1 in 3 cancer deaths in the US is linked to obesity, poor nutrition, or physical inactivity. At the federal level, ACS CAN is

working to protect and support implementation of quality nutrition standards for food served in schools and menu labeling in restaurants and other similar retailers. In California, the organization is working to increase opportunities for physical activity and increase access to healthy foods both at school and in communities. Because of the tremendous influence that the surrounding environment has on access to healthy foods and safe opportunities to be physically active, ACS CAN in California is also supporting healthy community strategies that include Safe Routes to School, community gardens, complete streets policies, safe playgrounds and parks, farmers' markets, and more.

Quality of Life/Pain and Palliative Care

In 2015, an estimated 1,658,000 people in the US will hear the words "you have cancer." No one with cancer should suffer needlessly from pain, nausea, and other symptoms of their treatment as their doctors concentrate on treating their disease. ACS CAN is working to improve patients' quality of life through expanded access to palliative care and pain management policies. Palliative care is specialized medical care that focuses on providing the best possible quality of life for a patient and their family by offering relief from the pain, stress, and other symptoms of a serious illness. It utilizes a coordinated and team-based approach among medical professionals to help ensure all of the patient's needs are met throughout treatment and survivorship. At the federal level, ACS CAN is supporting legislation to facilitate access to palliative care and coordinated care management for cancer patients and survivors. At the state level, the organization is looking at policy initiatives that improve patient access to palliative care and ensure that patients in need of pain management have access to it.

California Cancer Control Activities

Cancer Surveillance

Cancer rates among Californians are monitored by the California Cancer Registry (CCR), which has collected information on almost all cancers diagnosed in the state since 1988. To date, the CCR has collected detailed information on more than 3 million cases of cancer, with more than 140,000 new cases added annually. The database includes information on demographics, cancer type, extent of disease at diagnosis, treatment, and survival. With this high-quality data, leading cancer researchers are able to advance scientific knowledge about the causes, treatments, cures, and prevention of cancer.

The CCR in conjunction with the American Cancer Society produces *California Cancer Facts & Figures* each year. Additionally, through annual and special-topic reports, the CCR keeps health

professionals, policy makers, cancer advocates, and researchers informed about the status of cancer in California. CCR data are the cornerstone of cancer research in the state.

Tobacco Control

The strongest anti-tobacco legislation in the nation was passed by the citizens of California in 1988 – the Tobacco Tax and Health Promotion Act (Proposition 99). Since then, the California Department of Public Health (CDPH) has used funds from Proposition 99 taxes on tobacco products to launch an award-winning anti-smoking media campaign, to fund local prevention programs, and to monitor smoking prevalence and other use of tobacco products throughout the state. Lung cancer mortality rates are falling faster in California than elsewhere in the US.

Table 14. Cancer Reporting in California

Year	Milestone
1947	California Tumor Registry established in selected large hospitals
1960	Alameda County Cancer Registry established as the first population-based cancer registry in California
1969	San Francisco Bay Area Registry included in National Cancer Institute (NCI) Third National Cancer Survey
1972	Cancer Surveillance Program (CSP) of Los Angeles County established
1983	Cancer Surveillance Program of Orange County established
1985	California Cancer Reporting Law signed into effect (CCR established)
1988	Population-based cancer reporting initiated statewide
1992	CSP of Los Angeles included in SEER Program
1997	50 years of cancer reporting in California
2000	Published 10 years of complete statewide cancer reporting
2001	Greater California Registry included in SEER Program
2007	20 years of statewide population-based cancer reporting
2009	Published 20 years of complete statewide cancer reporting
2012	25 years of statewide population-based cancer reporting

Source: California Cancer Registry, California Department of Public Health. Prepared by the California Department of Public Health, California Cancer Registry

Cancer Prevention

The Cancer Prevention and Nutrition Section was established in 1986 to develop technical capacity in the CDPH for implementing large-scale dietary improvement measures. Its activities include the development and implementation of the 5 A Day for Better Health! Campaign in 1988, California Dietary Practices Surveys starting in 1989, and the Network for Healthy California.

Comprehensive Cancer Control

The California Dialogue on Cancer (CDOC) is a coalition of cancer control leaders from throughout the state, including members of state and local government, members of the public, nonprofit organizations, medical professionals, researchers, and cancer survivors; caregivers; and advocates. The members of the CDOC share the vision of reducing the cancer burden on the residents of California.

The CDOC was created to provide guidance and coordination for comprehensive cancer control activities in California while minimizing duplication of efforts by the CDPH, the Society's California Division, and other organizations engaged in cancer prevention and control activities. The CDOC originally convened in 2003 to develop the California Comprehensive Cancer Control (CCC) Plan. The plan has since been revised by the CDOC with updated goals and measurable objectives that aim to improve cancer outcomes, minimize disparities, and support continued cancer control efforts through 2015.

The CDOC's subcommittees or implementation teams conduct activities that align directly with the goals and objectives of the CCC plan. Currently, the CDOC's implementation teams focus their efforts on the following areas: advocacy; disparities; access to care and early detection; prevention; and treatment and survivorship. Issues related to access to care have been the main priority for the coalition over the past few years. The coalition's Access to Care team has successfully conducted community forums and initiated the formation of local coalitions/regional cancer care alliances throughout the state and plans to continue enhancing those efforts in the coming years. The CDOC has also played an instrumental role in supporting and establishing the California Colorectal Cancer Coalition (C4).

Breast and Cervical Detection

Every Woman Counts (EWC) provides free clinical breast exams, mammograms, pelvic exams, and Pap tests to California's underserved women. The EWC, which originally was a CDPH program, is now part of the Department of Health Care Service's Cancer Detection and Treatment Branch. The mission of the EWC is to save lives by preventing and reducing the devastating effects of cancer for Californians through education, early detection, diagnosis and treatment, and integrated preventive services, with special emphasis on the underserved. Regional cancer detection partnerships assist in outreach and education to women, quality assurance, and provider education. To determine eligibility for free screening, women can call 1-800-511-2300. Assistance is available in English, Spanish, Mandarin, Cantonese, Vietnamese, and Korean.

California Cancer Registry

The California Cancer Registry (CCR) is a collaborative effort among the California Department of Public Health's Chronic Disease Surveillance and Research Branch (CDSRB); the Institute for Population Health Improvement, UC Davis Health System; regional cancer registries; health care providers; cancer registrars; and cancer researchers throughout the state and the nation. The CDSRB collects, analyzes, and disseminates information on cancer incidence and mortality. The statewide population-based cancer surveillance system monitors the incidence and mortality of specific cancers over time and analyzes differential cancer risks by geographic region, age, race/ethnicity, sex, and other social characteristics of the population. It gathers cancer incidence data through the CCR, and conducts and collaborates with other researchers on special cancer research projects concerning the etiology, treatment, risk factors, and prevention of specific cancers. In addition, the system is designed to monitor patient survival with respect to the type of cancer, extent of disease, therapy, demographics, and other parameters of prognostic importance. In general, data generated from the CCR are utilized to:

- Monitor the amount of cancer and cancer incidence trends by geographic area and time in order to detect potential cancer problems of public health significance in occupational settings and the environment, and to assist in their investigation.
- Provide information to stimulate the development and targeting of resources to benefit local communities, cancer patients, and their families.
- Promote high-quality research into epidemiology and clinical medicine by enabling population-based studies to be performed to provide better information for cancer control.
- Inform health professionals and educate citizens regarding specific health risks, early detection, and treatment for cancers known to be elevated in their communities.
- Respond to public concerns and questions about cancer.

In California, legislation declaring mandatory cancer reporting became effective in 1985. Since January 1988, under the Statewide Cancer Reporting Law (Section 103885 of the Health and Safety Code), the CCR has covered the entire population of the state through the regional population-based registries.

Regional Cancer Registries

Region 1/8: Cancer Prevention Institute of California,
2201 Walnut Ave., Suite 300, Fremont, CA 94538
510-608-5000; Fax: 510-608-5095

Counties: Monterey, San Benito, Santa Clara and Santa Cruz, Alameda, Contra Costa, Marin, San Francisco, and San Mateo

Region 2: Cancer Registry of Central California,
1680 W. Shaw Ave., Fresno, CA 93711
530-345-2483; Fax: 530-345-3214

Counties: Fresno, Kern, Kings, Madera, Mariposa, Merced, Stanislaus, Tulare, and Tuolumne

Region 3: Sacramento and Sierra Cancer Registry,
1825 Bell St., Suite 102, Sacramento, CA 95825
916-779-0300; Fax: 916-564-9300

Counties: Alpine, Amador, Calaveras, El Dorado, Nevada, Placer, Sacramento, San Joaquin, Sierra, Solano, Sutter, Yolo, and Yuba

Region 4: Central Coast Cancer Registry,
1825 Bell St., Suite 102, Sacramento, CA 95825
916-779-0300; Fax: 916-564-9300

Counties: San Luis Obispo, Santa Barbara, and Ventura

Region 5: Desert Sierra Cancer Surveillance Program,
11306 Mountain View Ave., Suite B100, Loma Linda, CA 92354
909-558-6174; Fax: 909-558-6178

Counties: Inyo, Mono, Riverside, and San Bernardino

Region 6: Cancer Registry of Northern California,
25 Jan Court, Suite 130, Chico, CA 95928
530-345-2483; Fax: 530-345-3214

Counties: Butte, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Napa, Plumas, Shasta, Siskiyou, Sonoma, Tehama, and Trinity

Region 7: San Diego and Imperial Cancer Registry,
1825 Bell St., Suite 102, Sacramento, CA 95825
916-779-0300; Fax: 916-564-9300

Counties: Imperial and San Diego

Region 9: Cancer Surveillance Program—University of Southern California, Soto Street Building, Suite 305,
2001 North Soto St., MC 9238, Los Angeles, CA 90089-9238
323-442-2300; Fax: 323-442-2301,

County: Los Angeles

Region 10: Orange County Cancer Registry,
1825 Bell St., Suite 102, Sacramento, CA 95825
916-779-0300; Fax: 916-564-9300

County: Orange

For more information:

The American Cancer Society publishes eight national *Facts & Figures* publications, which present current trends in cancer occurrence and survival, as well as information on symptoms, prevention, early detection and treatment.

Visit cancer.org/statistics to download a free PDF version of any of the *Facts & Figures* publications:

- *Cancer Facts & Figures 2015*
- *Cancer Prevention & Early Detection Facts & Figures 2014*
- *Breast Cancer Facts & Figures 2013-2014*
- *Colorectal Cancer Facts & Figures 2014-2016*
- *Cancer Facts & Figures for African Americans 2013-2014*
- *Cancer Facts & Figures for Hispanics/Latinos 2012-2014*
- *Cancer Treatment & Survivorship Facts & Figures 2014-2015*
- *Global Cancer Facts & Figures 3rd Edition*

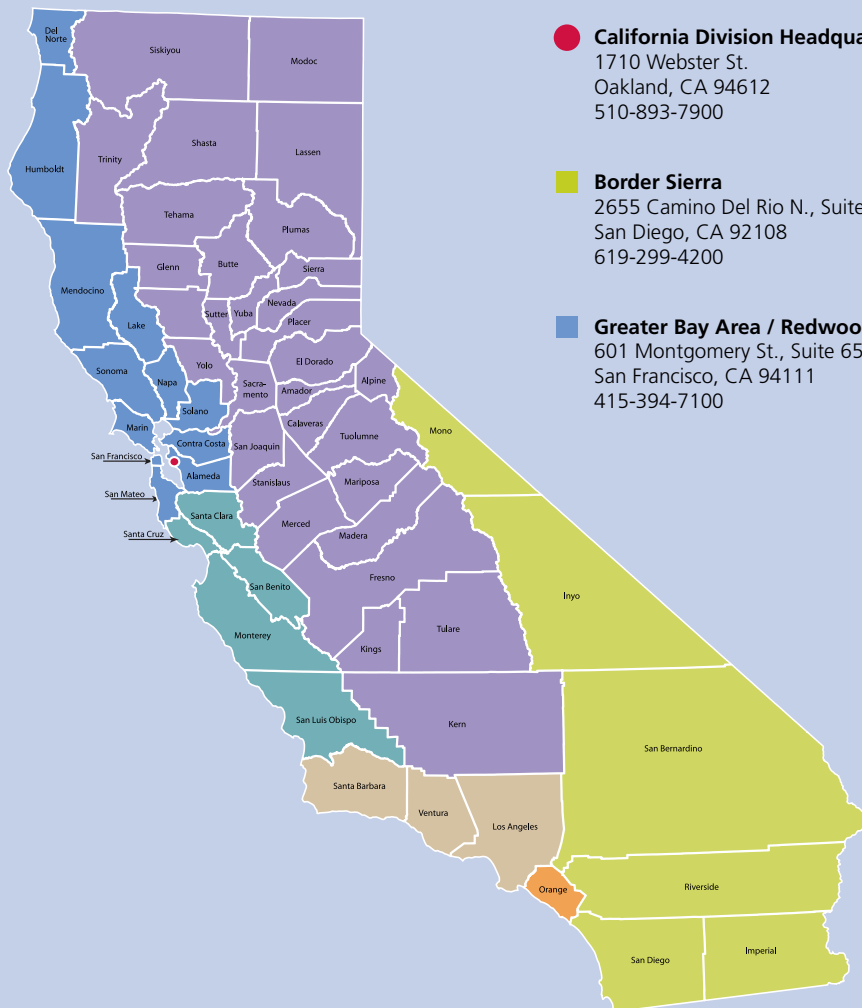
The California Cancer Registry of the California Department of Public Health provides California cancer data used by health researchers, program planners, and public health advocates.

Visit the California Cancer Registry website at ccrca.org for the following resources:

- California Cancer Registry's *Cancer in California, 1988-2010*
- Annual Statistical Tables by Cancer Site, 1988-2011
- Data & Mapping Tool (generate customized maps and tables of California cancer incidence or mortality rates)

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